



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF TRANSPORTATION

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September 17, 1980

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MEMO TO: Henry Bennett
Acting, State Highway Engineer
Acting, Chairman, Research Committee

SUBJECT: Research Report 554; "Frictional Performance of Pavements and Estimates of Accident Probability;" KYP-74-60, Part III B; and KYHPR-75-76 and KYHPR-71-66; Part II; HPR-PL-1(16)

The report submitted herewith presents a comprehensive and innovative evaluation of standard and experimental surfaces on roads in Kentucky in terms of skid resistance and effects of traffic. Criteria for judging suitability of these surfaces to satisfy requirements for skid resistance and economics are also developed and cited therein.

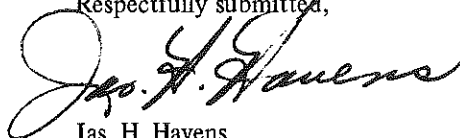
Expedient judgments may now be made in the selection of pavement types most suitable for various traffic volume roads. Failure of a few pavements to meet minimum friction needs tend to spoil the lot. Balancing high goals and standards with economic considerations, only an occasional occurrence of spoiler will be found. Then, to safeguard the public from those pavements found to be excessively slippery, de-slicking or texturing would be the preferred remedy. Otherwise, advisory signs warning of the hazard may be posted. "Slippery When Wet" signs, if left too long, may be adjudged to be a sign or admission of negligence.

Skid resistance data gathered over several years were used in the regression analyses; most of the data were obtained from statewide surveys. Performance of some pavement types was determined from rather limited data and, in some cases, several years of data for some pavements were combined with single data points for other pavements. In those cases, some caution must be taken in viewing the performance equations as being faithfully representative of pavements of that type. Of course, validity of traffic volume data as well as accuracy, and even appropriateness, of the friction values obtained (at 40 mph for instance) and used as an index to accident risks in wet-pavement conditions remains a concern.

The development and performance-monitoring of skid-resistant surface courses continues. Surfaces introduced rather recently, including Class AA bituminous, must be tested further and inspected frequently. Additional insights concerning life and character of those surfaces, and the aggregates and sands used in them, may be expected. Crushed, sharp, hard, or vesicular non-polishing aggregates continue to be the attributes of ingredient materials importing skid-resistant qualities to surface courses.

The contributions of earlier work undertaken in Research Study KYHPR-71-66 on Correlation of Pavement Skid Resistance with Qualities of Sands, including Research Reports 312 and 385, must be recognized. Insights and understanding were gained there, and the methods of test and specifications for sand-asphalts have affected the development, or evaluation, of other surface courses.

Respectfully submitted,

A handwritten signature in cursive script, reading "Jas. H. Havens". The signature is written in dark ink and is positioned above the printed name and title.

Jas. H. Havens
Director of Research

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Attachment

cc's: Research Committee

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Frictional Performance of Pavements and Estimates of Accident Probability		5. Report Date September 1980	
		6. Performing Organization Code	
		8. Performing Organization Report No. 554	
7. Author(s) J. L. Burchett and R. L. Rizenbergs		10. Work Unit No. (TRAIS)	
9. Performing Organization Name and Address Division of Research Kentucky Department of Transportation 533 South Limestone Street Lexington, Kentucky 40508		11. Contract or Grant No. KYP-74-60 KYHPR-75-76, and KYHPR-71-66	
		13. Type of Report and Period Covered Interim and Final	
		14. Sponsoring Agency Code	
12. Sponsoring Agency Name and Address			
15. Supplementary Notes Study Titles: KYP-74-60, Pavement Slipperiness Studies KYHPR-75-76, Wet-Surface Accidents and Their Relation to Pavement Friction KYHPR-71-66, Correlation of Skid Resistance with Qualities of Sands			
16. Abstract ABSTRACT Objectives of this study were to evaluate standard and experimental surfaces throughout Kentucky in terms of skid resistance and effects of traffic, and to provide criteria for judging suitability of these surfaces to satisfy requirements for skid resistance and economics. The effects of traffic were quantified by regression analysis and scatter of data. Criteria included an estimate of accident risks, effects of speed on skid resistance, and seasonal variations in skid resistance. The analysis indicated that pavements on low volume roads (less than 1,000 vehicles per day) maintained adequate skid resistances. Open-graded friction courses, with the possible exception of sections using phosphate slag aggregate, maintained adequate skid resistance to meet design requirements. The adequacy of other pavements may be judged from the criteria provided herein. Estimates of accident reduction were made by combining the relationship between skid numbers and accidents with the distribution of skid numbers for each pavement type. Those reductions were used to calculate benefits which, along with costs of overlay, were used to determine benefits-cost ratios. Benefits exceeded costs for roads having AADT's greater than 750, 2,500, and 5,000 and SN's less than 24, 30, and 35, respectively.			
17. Key Words Skid Resistance Pavement Performance Friction Requirements Wet-Pavement Accidents Pavement Mix Design		18. Distribution Statement	
19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price

Research Report
-554-

FRictionAL PERfORMANCE OF PAVEMENTS AND ESTIMATES
OF ACCIDENT PROBABILITY

INTERIM REPORT
KYP-74-60; HPR-PL-1(16), Part III B

and

INTERIM REPORT
KYHPR-75-76; HPR-PL-1(16), Part II

and

FINAL REPORT
KYHPR-71-66; HPR-PL-1(16), Part II

by

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and

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Bureau of Highways
DEPARTMENT OF TRANSPORTATION
Commonwealth of Kentucky

The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Bureau of Highways nor of the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

September 1980

INTRODUCTION

Reduction in skid resistance of pavements is related to loss of macro-texture and to polishing of aggregates. Loss of macro-texture is caused by wear and, in case of asphaltic concrete, consolidation induced by traffic. Skid resistance varies with cumulative traffic (1). Variances are influenced by and attributed to differences in volume and composition of traffic, aggregate types (polish susceptibility), and weathering (including frequency and duration of rainfall). Variations occur seasonally (2) and are affected by traffic volume.

Survey testing of roads in Kentucky since 1974 has generated data to evaluate the performance of several types of pavements. These include Class I, Types A and A (Modified), bituminous pavement; portland cement concrete pavement; and Kentucky rock asphalt. Other types of pavement have generated sufficient data to determine performance up to about 12 million vehicular passes. These mixtures include Sand-Asphalt, Special Provision 59B; Sand-Asphalt, Type I; Sand-Asphalt, Type II; and open-graded friction courses. More limited data from other surfaces and texturing treatments are also presented. These include sprinkle treatment, milling, and bituminous concrete, Class AA (skid resistant).

Degrees of hazard are related to needs for traction and, therefore, to speed and density of traffic, turning and stopping movements, and roadway geometrics. Indeed, there are degrees of risk associated with highway hazards. Nevertheless, expedient judgements are being made in regard to the significance or meaning of skid numbers. Critical SN's have been derived for interstate and toll roads (3) and for principal two-lane roads (US routes) (4). The critical value of SN for interstate and toll roads (by interpolation) was about 40; the critical value for principal two-lane roads was between 38 and 43.

Speed limits were reduced from 60 mph (26.8 m/s) (daytime) to 55 mph (24.6 m/s) in March 1974. The relationship between

accidents and pavement friction, therefore, may have been altered. A study of those after-effects is going forward. Preliminary results from two-lane roads (about 5,000 miles (8,000 km)) are presented herein.

Perhaps the surface providing the highest SN's may seem desirable -- to minimize risks. Otherwise, minimizing risks must be balanced with benefits to obtain the greatest safety with monies available. Thus, final criteria for adequacy of surface courses must include a best-good-for-all approach and priority-type programming; and the criteria may be different for various classes of roads.

DATA SOURCES

SKID TEST

Beginning in 1974, testing was done from June through November. Through 1975, tests were made with a Surface Dynamics Pavement Friction Tester (Model 965A). The two-wheeled skid-test trailer was acquired in 1969. A second unit, a Model 1270 Pavement Friction Tester, was acquired in March 1976. It was equipped for survey-type testing (left wheel path only). Both units were used in 1976 through 1979. The units were fabricated by K.J. Law Engineers, Inc. and comply with ASTM E 274 (5). The measurements are based on a standard tire (ASTM E 501) (6) and a wetted pavement. The locked-wheel measurement is expressed as skid number (SN). The equipment, methods, and procedures have been described previously (7, 8).

Test on portland cement concrete (PCC) and Class I, Type A and Type A (Modified), bituminous surfaces on interstate and toll roads were made in 1974, 1977, and 1979. All lanes were tested in 1974; only the outer lanes were tested during 1977 and 1979. Tests on other PCC and Class I, Type A and Type A (Modified), bituminous surfaces and on Kentucky rock-asphalt surfaces were made as a part of the 1975 survey (8). Sections of Class I Type A and Type A (Modified) pavements were included in the

analysis of performance only if they were at least 4 miles (6.4 km) long. Tests on the other pavements were made at various times during the period from June 1974 through 1979. Some pavements were tested at 25 and 55 mph (11 and 25 m/s), and all pavements were tested at the standard test speed of 40 mph (18 m/s).

ACCIDENT INFORMATION

Accident data were obtained from State Police records which were computerized by the Department of Justice. Accidents reported during calendar years 1976 and 1977 were used in conjunction with skid numbers obtained in 1975 and 1976, on two-lane roads, to determine a relationship between wet-pavement accidents (as a percentage of total accidents) and pavement friction. Accidents for the 2-year period totaled 29,783 -- of which 5,930 occurred during wet-pavement conditions -- on 1,209 sections. Accidents reported during 1979 were used in conjunction with skid numbers obtained during 1977 and 1978, on two-lane roads, to determine wet-pavement accidents per mile (km) per year to ascertain potential benefits from de-slicking. Accidents totaled 16,533 -- of which 3,785 occurred during wet-pavement conditions -- on 1,132 sections.

PRECIPITATION

Precipitation data were obtained from monthly tabulations of "Local Climatological Data" (9) for seven weather stations in and around Kentucky. Yearly averages of precipitation in Kentucky since 1969 are presented in Table 1.

TRAFFIC VOLUME

Annual average daily traffic (AADT) was determined for each pavement section using the traffic flow maps published biennially by the Office of Transportation Planning. The 1975 AADT's were used with accidents occurring during 1976 and 1977 on sections tested in 1975 and 1976. The 1977 AADT's were used with accidents during 1979 on sections tested in 1977 and 1978. The AADT's were also used to calculate cumulative traffic.

PROCEDURES

CUMULATIVE TRAFFIC CALCULATIONS

The 1973 AADT's were used for the 2-year period of 1973 and 1974; the 1975 values were used for 1975 and 1976; etc. For two-lane roads, the cumulative traffic was calculated from the AADT value, divided by two, times the number of days in the time frame. For four and six-lane roads, the values were adjusted according to lane distribution factors reported by Pigman and Mayes (10). All values were as of the date of test. No weighting factors for trucks were applied.

An effective annual average daily traffic was determined for each pavement section by dividing the cumulative traffic by the number of days the pavement was open to traffic. The effective AADT then is the average number of vehicles per day that traversed the pavement.

REGRESSION ANALYSIS

The relationships between skid resistance and cumulative traffic were determined by regression analysis and the method of least squares. Previous research (1) had shown that skid resistance could be related to the logarithms of cumulative traffic; therefore, a logarithmic equation was used here as the model. Cumulative traffic was expressed in terms of millions of vehicle passes. New surfaces subjected to little or no traffic yielded spurious skid numbers. For this reason, data associated with cumulative traffic of less than 0.1 million vehicle passes were omitted from the regression analysis.

Preliminary analysis of Class I bituminous and portland cement concrete pavements indicated the best-fit equations were unduly influenced by sections having low volumes of traffic. Cumulative traffic for these low-volume sections were, of course, also low, and skid numbers were high. This resulted in best-fit equations that predicted unduly low skid numbers at high values of cumulative traffic. For this reason, the data were grouped by effective AADT, and the performance equations were determined for

TABLE 1. PERCENT OF TIME OF PRECIPITATION IN KENTUCKY (TRACE OR MORE).

YEAR	RAINFALL	SNOW AND ICE	NO PRECIPITATION
1969	11.5	2.6	85.9
1970	11.5	3.1	85.4
1971	10.5	2.4	87.1
1972	14.3	2.3	83.4
1973	13.1	2.3	84.6
1974	13.8	2.4	83.8
1975	13.5	2.4	84.1
1976	9.9	2.1	88.0
1977	10.1	3.9	86.0
1978	11.5	4.2	84.3
1979	13.8	3.9	82.2
All	12.1	2.9	85.0

each group.

Scatter of data at low values of cumulative traffic was greater than at high values (see APPENDIX B). Thus, the standard errors of estimate, derived from regression analyses, were not an appropriate indicator of scatter throughout the range of cumulative traffic. Instead, standard deviations were determined using data stratified by cumulative traffic.

The first part of the procedure to determine standard deviation was to establish a data set representing the differences between measured SN and predicted SN. These differences were then grouped in a five-point, moving average beginning with the five highest cumulative traffic values. The standard deviation of the differences in SN and the average cumulative traffic were determined for this group of five points. The data for the highest cumulative traffic was then dropped, and the sixth highest value was added. Again, the standard deviation of the differences in SN and the average cumulative traffic were determined. The procedure continued until the last group consisted of data associated with the five lowest values of cumulative traffic.

A multiple of the calculated standard deviation was subtracted from the SN predicted for the average cumulative traffic. This was done for each five-point group and resulted in a set representing a lower limit of SN's above which a known percentage of measured SN's occur. The percentage depends on the multiple of the standard deviation. In this analysis, a multiple of 2.5 was used to establish SN levels which should be exceeded by 99.4 percent of the measured SN's. Additional analysis was done to determine a multiple, and consequently a percentage, for predetermined levels of SN's. Relationships between the lower limit of SN's and cumulative traffic were determined.

CRITERIA FOR PREQUALIFYING PAVEMENTS

FRICTION REQUIREMENTS FOR ROADS

The relationship between percentage of accidents on wet pavement and SN's on two-lane roads (about 5,000 miles (8,000 km)) is presented in Figure 1. Here, the points represent averages of groupings by two skid numbers. The data were fitted by regression analysis such that the line would indicate nearly 100 percent at SN of 0. Also, at high values of SN, the percentage of wet-pavement accidents would be at least as high as the percentage of time the pavements were wet. In Kentucky, for the two-year period of accident statistics (1976 and 1977) included in the analysis, this percentage was 10; but it was adjusted to 12. Regression equations were determined for various percentages at which the curve becomes asymptotic. The best-fit line is presented in Figure 1. The line indicated that, even if skid resistance remained equivalent to dry-pavement values, wet-pavement accidents comprised 16 percent of the total. This four-percentage point increase (from 12 percent wet time) resulted because reduced visibility, roadway spray, and hydroplaning contributed to accidents. The data were greatly scattered. Thus, use of this trend line for evaluating specific locations must be in conjunction with other supporting statistics -- such as occurrences of accidents or, perhaps, number of conflicts.

A minimum skid number must be set to safeguard the public from slipperiness regardless of the accident history of the highway or conditions of the pavement otherwise. Figure 2 was prepared, from the best-fit line of Figure 1, to show the increased risk of an accident being a wet-pavement accident at SN's less than the equivalent dry-pavement values. For example, from Figure 1 at SN 60, 18 percent of the accidents occurred on wet pavements; this was a 12.5-percent increase from the 16 percent. Likewise, at SN 27, 32 percent of the accidents occurred on wet pavements; this was a 100-percent increase from the 16 percent.

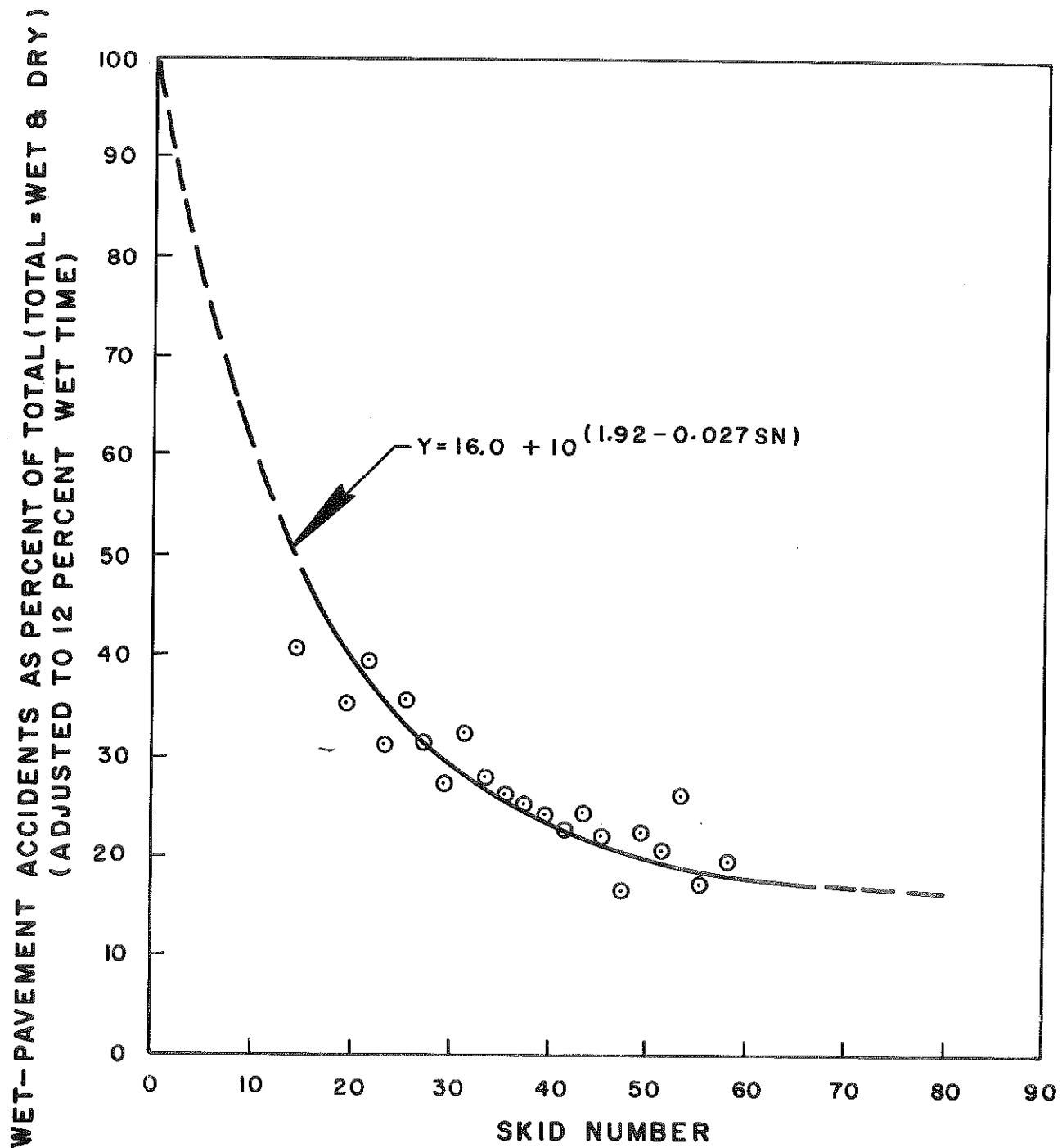


Figure 1. Wet-Pavement Accidents as Percentage of Total (Adjusted to 12 Percent Wet Time) versus Skid Number (1976-1977); 1,200 Sections (about 5,000 miles (8,000 km)) of Two-Lane Roads; Grouped by Two Skid Numbers; AADT's above 750.

Of course, pavements cannot be maintained at SN's equivalent to dry-pavement values; and obtainable levels of skid resistance for new pavements must be selected on the basis of other criteria (discussed later). Moreover, the relationship shown in Figure 2 indicates the desirability of establishing a maximum risk for existing pavements and provides a means of assessing the relative consequences. The selection of maximum risk must be tempered with realism. For example, an unallowable increased risk of only 50 percent (SN 38) would mean that over one-half of the road mileage (AADT more than 1,000) would not qualify (almost 5,000 miles (8,000 km)). However, an unallowable risk of 91 percent (SN 28) would mean that a more manageable, six percent of the road mileage would not qualify (almost 600 miles (1,000 km)).

Present criteria for identifying pavements in need of de-slicking (11) specifies that any highway section with an AADT greater than 1,000 should be de-slicked if the SN of the pavement is 28 or less. A total of 632 miles (1,011 km) of state roads met this criterion. In addition, highway sections with SN's between 29 and 32 were selected if accident experience indicated a wet- to dry-pavement accident ratio of at least 0.30. These sections totaled an additional 30 miles (48 km). As efforts to de-slick candidate roads are successful, increasing the minimum SN allowed on existing pavements may be feasible.

Based on these present criteria for identifying existing pavements in need of de-slicking, the criterion for new pavements, for this category of road, was set to prevent future occurrences. The criterion specifies that the mature SN of a surface, at -2.5 standard deviations (99.4 percent assurance), must exceed 32.

PAVEMENT LIFE

Judgments of the suitability of surfaces must include a consideration of service life and traffic volumes to determine when a SN is a mature value. A surface, during its life, may provide

suitable SN's for a road with low traffic volume but may not be adequate for a road with high traffic volume. For example, if a pavement provides adequate SN through 10 million vehicle passes and its service life is estimated as 12 years, the pavement is suitable for use on roads with traffic volumes as high as 4,600 vehicles per day (average volume for the 12 years)(see Figure 3). At lower traffic volumes, the pavement would age 12 years prior to accumulating 10 million vehicle passes. At higher traffic volumes, the surface may exhibit SN's of 32 or less before reaching the 12 years of life and, thus, may require a premature (or planned) surface renewal.

The useful life of an overlay depends on such variables as type and thickness of the overlay, traffic volume, numbers and types of trucks, and weather conditions (12). The useful life of an overlay ends when it becomes unusually slick, rough, cracked, or rutted. Predicting the number of years when any of these failing conditions will occur is quite difficult. The actual term of service ends when the pavement is resurfaced again or when the road is abandoned.

EFFECTS OF SPEED

Another characteristic to be considered in judging the suitability of surfaces is the relationship between skid resistance and speed. Skid resistance decreases with increasing speed. The skid resistance at 40 mph (18 m/s) (normal test speed), from earlier tests (1), was 12 to 15 SN's higher than at 60 mph (27 m/s). Many of the pavements were tested at 25 mph (11 m/s) and 55 mph (25 m/s). These data are included in APPENDIX C. A representative curve for each pavement type is shown in Figure 4. The decrease in skid resistance, from 40 mph (18 m/s) to 55 mph (25 m/s), ranged from a high of 10 SN's on portland cement concrete (burlap drag texturing) to 3 SN's on open-graded friction courses.

A vast majority of pavements involved in the study to relate accidents with pavement friction on two-lane roads were Class I bituminous (shown in Figure 1).

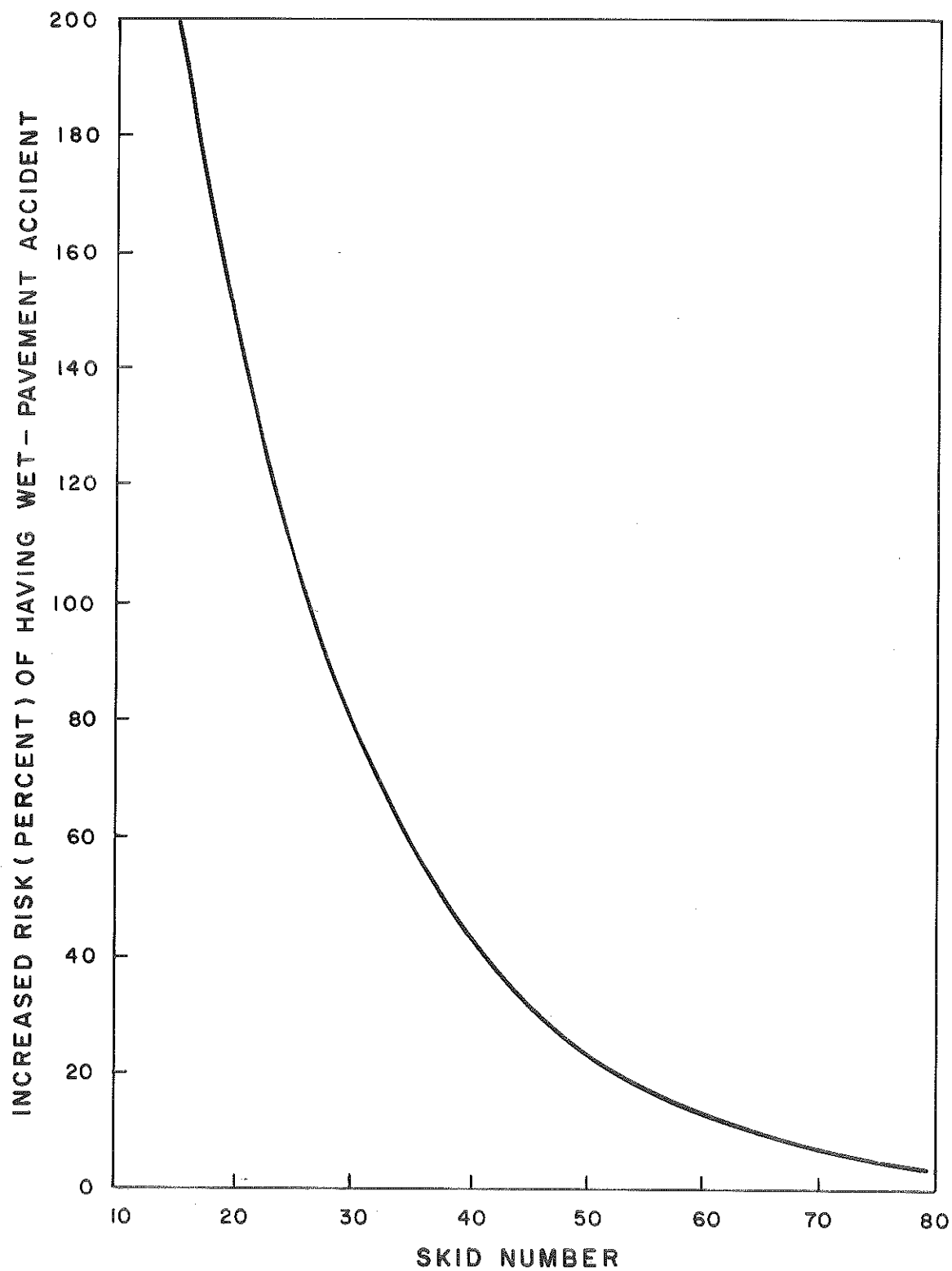
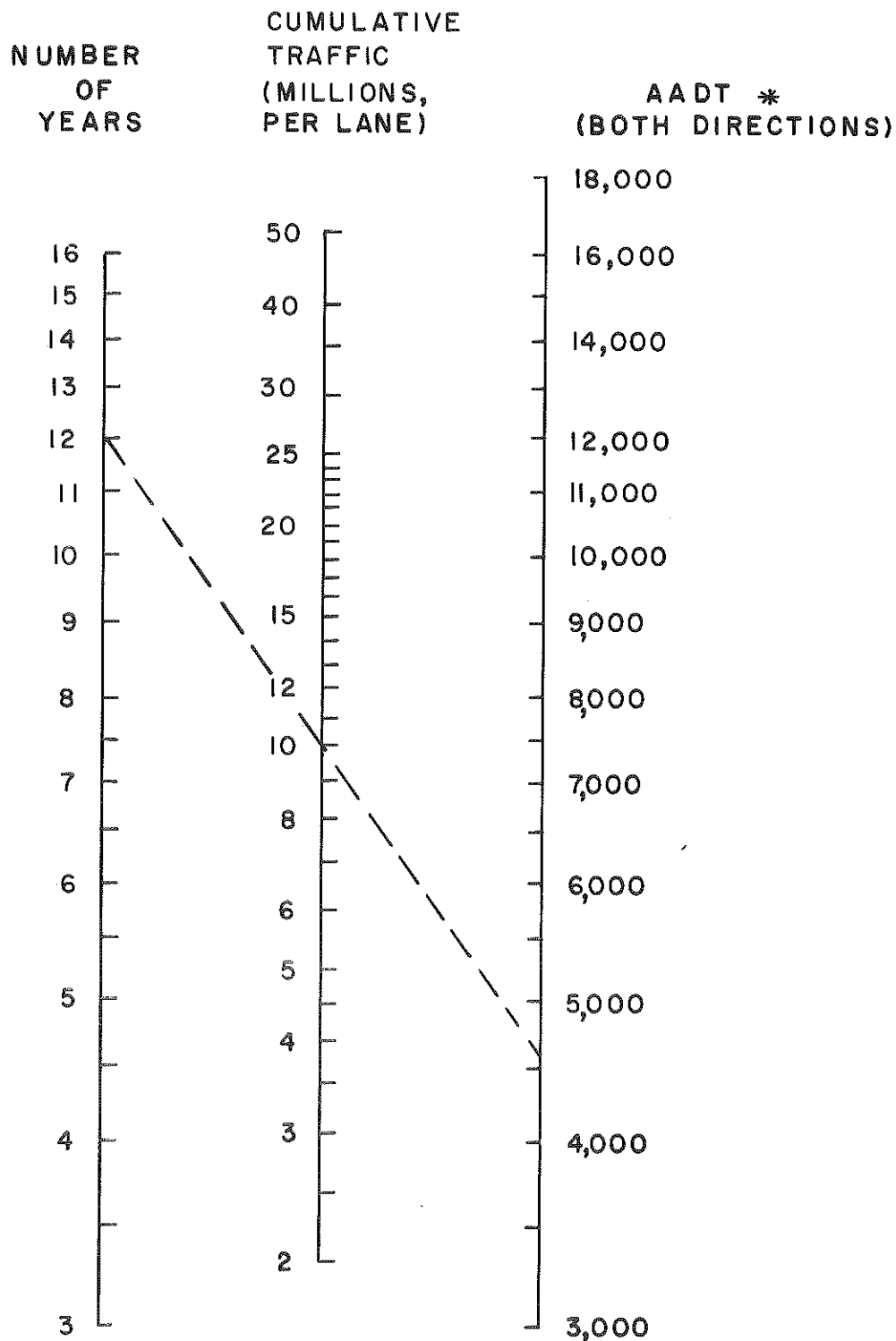


Figure 2. Increased Risk of Having Wet-Pavement Accident at Skid Numbers less than Dry-Pavement Values.



* Use lane distribution factors to convert AADT to lane values

Figure 3. Nomograph Relating Number of Years, Cumulative Traffic, and AADT.

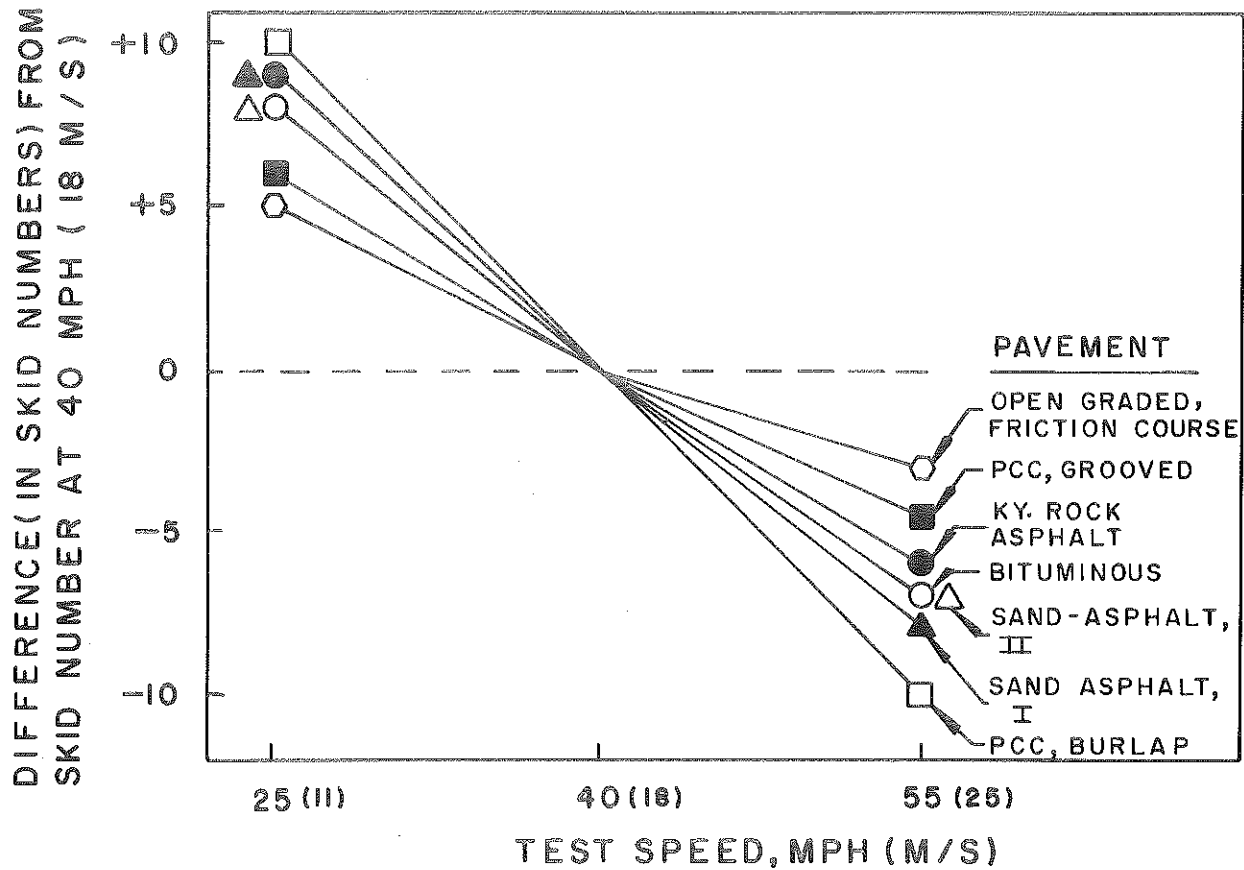


Figure 4. Effect of Speed on Skid Resistance of Several Pavement Types.

Therefore, surfaces for high-speed roads, and with decrease in skid resistance lower than for Class I, may be viewed more positively; and surfaces with higher decreases in skid resistance may be viewed more negatively. On the other hand, surfaces for low-speed roads may be viewed more positively if increases in skid resistance, from 40 mph (18 m/s) to 25 mph (11 m/s), are higher.

SEASONAL VARIATIONS

Evaluations, herein, were based on tests conducted during the summer and fall. Research has shown that skid resistance varies seasonally and is lowest during the late summer and early fall (2). Table 2 presents the maximum, yearly, SN variations of pavements in Kentucky. Class I bituminous surfaces, on higher volume roads, were as much as 14 SN's higher during the winter than that during the late summer. Sand-Asphalt exhibited as much as 11 SN's higher, and PCC pavements were 5 SN's higher. Data on one section of an open-graded friction course indicated the skid resistance of that surface varied little. A higher SN during the winter and spring is, of course, a positive attribute of a pavement and should be considered in the selection of surfaces.

PAVEMENT PERFORMANCE

CLASS I, BITUMINOUS

Until 1976, high-type bituminous pavement was designated Class I. Beginning in 1963, the mixture was designated Class I, Type A (13). The mixture was made less dense and, in 1969, became Class I, Type A (Modified) (14). The 1976 edition of the Standard Specifications... (15) designated these two mixtures as bituminous concrete surface, Type A and Type B, respectively. The 1979 edition of the Standard Specifications... (16) specifies only one surface type. More detailed information is provided in APPENDIX A.

Limestone was the predominant coarse aggregate in these surfaces.

Unfortunately, most, if not all, limestones are susceptible to polishing. The surfaces also contained natural or conglomerate sand in the proportion of not less than 40 percent of the combined aggregate. Mineral composition, gradation, and particle-shape requirements for sand, however, were not specified.

In-service performance of Class I, Type A and Type A (Modified), bituminous surfaces on interstate and toll roads (1974, 1977, and 1979 test years) and on US and KY routes (1975 test year) are shown in APPENDIX B. Data are tabulated in APPENDIX C. The best-fit lines did not indicate any significant performance differences between test years. However, there was a difference between the different styles of road. Best-fit equations for the two effective AADT groups are plotted in Figure 5 for interstate and toll roads and in Figure 6 for US and KY roads. Also plotted, for pavement sections with higher than 2,500 vehicles per day, is the best-fit line representing a lower limit of minus 2.5 standard deviations.

As mentioned previously, tests on new bituminous surfaces, that had experienced little or no traffic, yielded spurious skid numbers. Valid tests were conducted only after asphalt coating on the surface of the aggregates, and other contaminants, had worn away. In most cases, however, conducting tests at the proper time to determine the initial skid resistance was not possible. Surfaces having low cumulative traffic had initial SN's in the order of 50 for interstate and toll roads and 45 for US and KY routes. Subsequent loss of skid resistance occurred as the sections accumulated more traffic. Both the cumulative traffic and traffic volume (effective AADT) were significant variables.

For interstate and toll roads (Figure 5) with 1,000 to 2,500 vehicles per day, the SN decreased to about 46 after only one million vehicle passes and decreased less rapidly to a SN of 45 at seven million vehicle passes. For those sections, the lower limit indicated that 99.4 percent maintained SN's greater than

TABLE 2. MAXIMUM, YEARLY, SKID NUMBER VARIATION (From Reference 2)

PAVEMENT	AVERAGE AADT	SKID NUMBER VARIATION	MONTH OF LOWEST SN
Class I, Bituminous	5,200	14	September
	1,050	4	August
Sand-Asphalt	2,450	11	August
Portland Cement Concrete	5,450	5	August

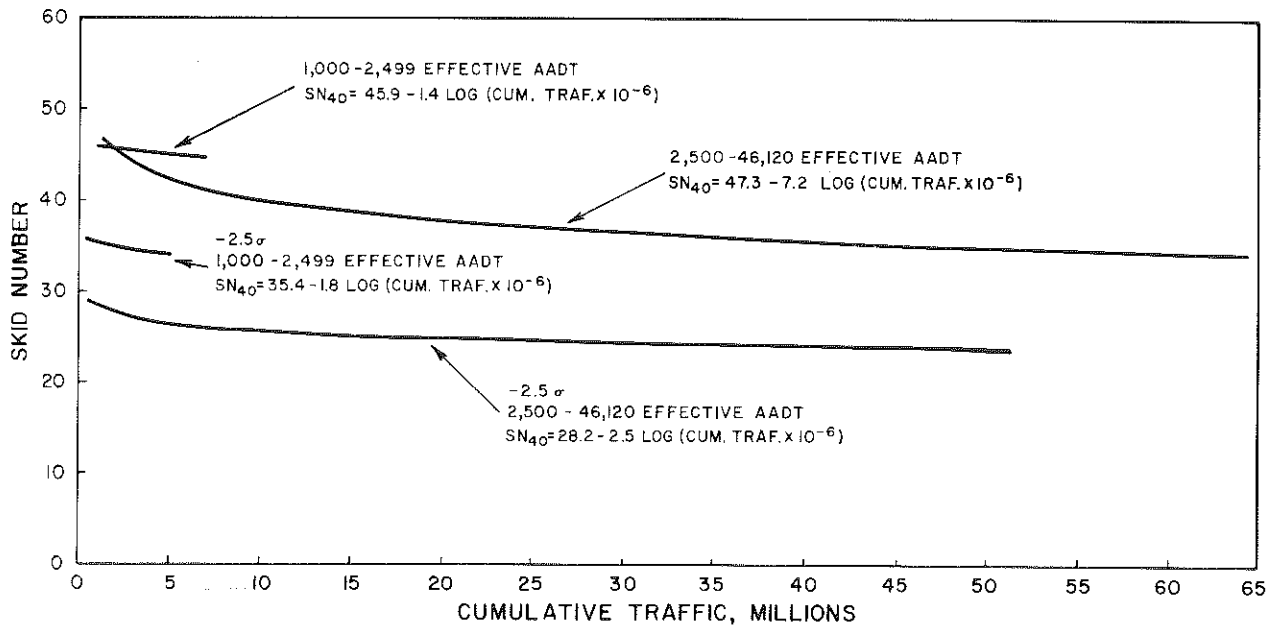


Figure 5. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces (Interstate and Toll Roads).

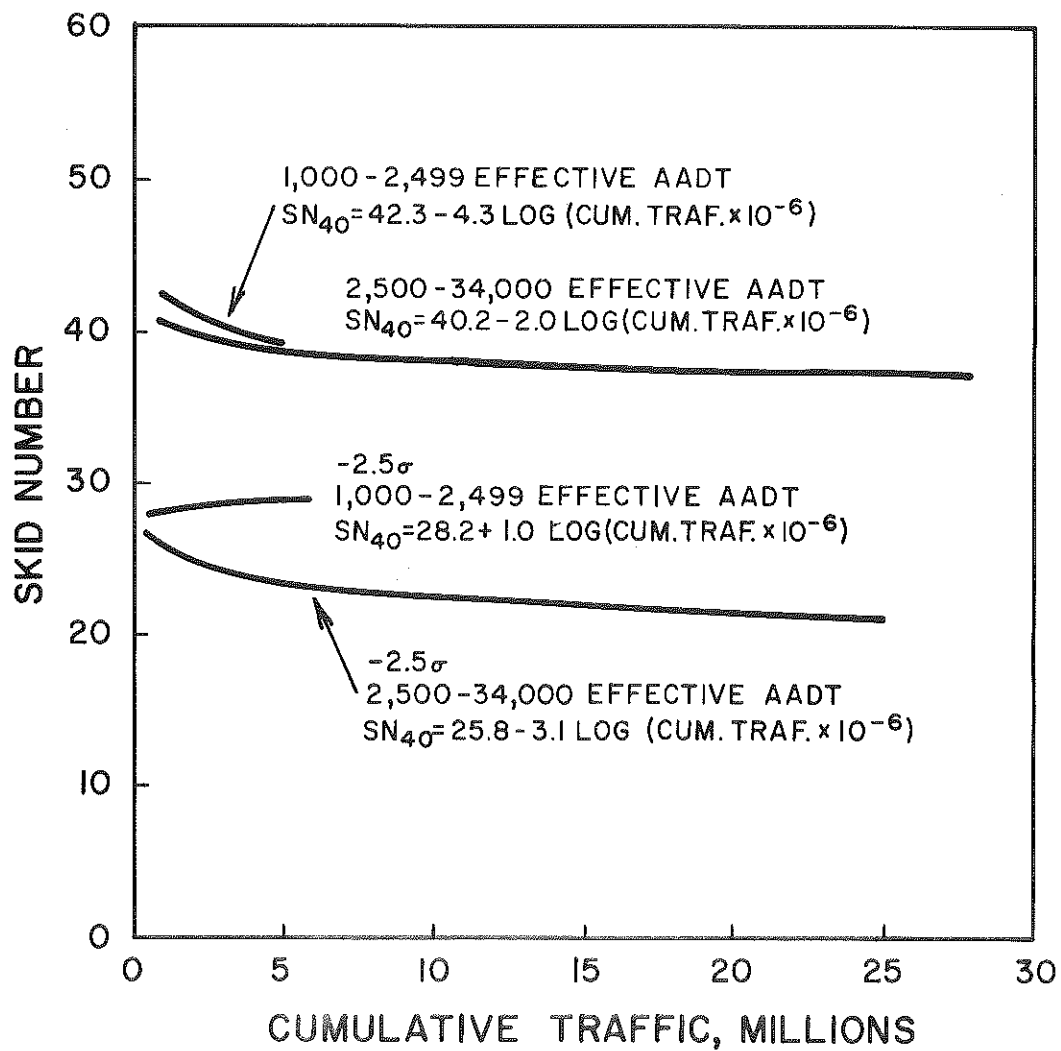


Figure 6. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces (US and KY Roads).

34 at five million vehicle passes. For surfaces with more than 2,500 vehicles per day, the SN was 47 at one million vehicle passes, and decreased to 40 at ten million vehicle passes and to 35 after sixty million vehicle passes. For these sections, the lower limit indicated that 99.4 percent maintained SN's greater than 24 at 50 million vehicle passes.

For US and KY routes (Figure 6) with 1,000 to 2,500 vehicles per day, the SN decreased to 42 after one million vehicle passes and continued decreasing to 39 at five million vehicle passes. For those sections, the lower limit indicated that 99.4 percent maintained SN's greater than 28 at five million vehicle passes. For surfaces with more than 2,500 vehicles per day, the SN was 40 at one million vehicle passes and continued decreasing gradually to a SN of 37 at 27 million vehicle passes. For these sections, the lower limit indicated that 99.4 percent maintained SN's greater than 21 at 20 million passes.

CLASS AA, BITUMINOUS

A bituminous concrete surface placed for the first time in 1979, was Class AA (skid-resistant). A description of this mixture is presented in APPENDIX A. Results of skid tests of the two projects are tabulated in APPENDIX C. Initial SN's varied from 41 to 50.

PORTLAND CEMENT CONCRETE

Until the Kentucky Turnpike was built (1955) and the beginning of interstate construction, very few miles of concrete pavement had been built in Kentucky for a long time. Now, most of the interstate and toll roads is PCC. Indication of serious slipperiness of PCC pavements was found in 1970 and 1971. Tests at that time indicated low skid resistance on much of the concrete surfaces on interstates, especially at the higher test speeds (1).

Limestone has been used as coarse aggregate in most PCC pavements. Projects on I 75 in Northern Kentucky (north of Milepoint 166.3) and projects on I 71, however, contained crushed calcareous glacial gravel. Fine aggregates were

natural sand, comprising 34 to 40 percent of the combined solid volume of the fine and coarse aggregate. More detailed information is given in APPENDIX A.

In-service performance of PCC surfaces (burlap drag texturing) on interstate and toll roads (1974 test year) and on other roads (1975 test year) are shown in APPENDIX B. Data are tabulated in APPENDIX C. The best-fit lines did not indicate any difference in performance either between test years or between styles of road. Best-fit lines for the two effective AADT groups are shown in Figure 7. Also plotted, for pavements with more than 2,500 vehicles per day, is the best-fit line representing a lower limit of minus 2.5 standard deviations.

As shown in Figures B-8, B-9, and B-10 (APPENDIX B), several sections of road contained crushed calcareous glacial gravel as the coarse aggregate. To determine if these sections exhibited different performance histories than sections with limestone aggregate, the data for those sections using glacial gravel were separated from the combined data and regression analyses of each group was conducted. The analyses indicated the best-fit line for each group was identical to the other and was the same as the best-fit line shown in Figure 7. There was, however, a slight difference in the minus 2.5 standard deviation equations. The lower limit equation for sections of road with glacial gravel aggregate was about one skid number less than that obtained for all sections; the values for sections of road with limestone coarse aggregate was the same as for all sections.

Tests of PCC surfaces with low values of cumulative traffic indicated initial SN's on the order of 55. As shown in Figure 7, subsequent loss of skid resistance occurred as the roadway sections accumulated traffic. SN's, for surfaces with less than 2,500 vehicles per day, dropped to about 49 after only one million vehicle passes and continued decreasing less rapidly to a SN of 48 after seven million vehicle passes. For these sections, the lower limit indicated that 99.4 percent maintained SN's greater

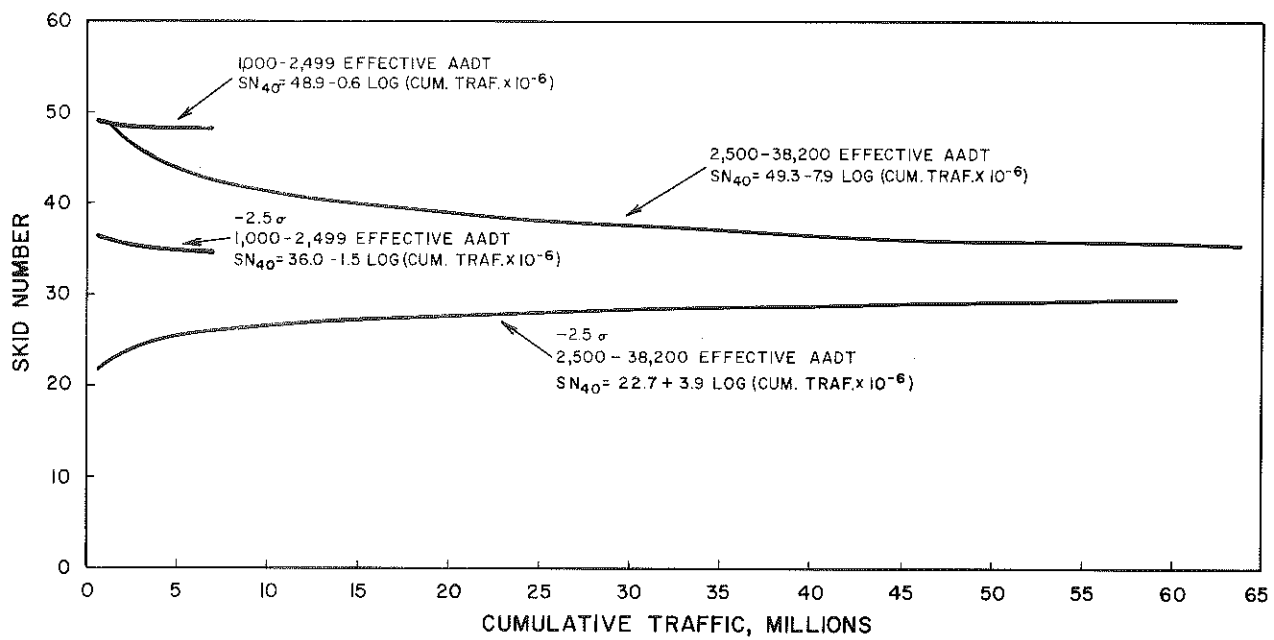


Figure 7. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces.

than 34 at seven million vehicle passes. For surfaces with more than 2,500 vehicles per day, the SN was 49 at one million vehicle passes, dropped to 41 at ten million vehicle passes, and continued decreasing to SN 35 at sixty million vehicle passes. Also, for sections with more than 2,500 vehicles per day, the lower limit indicated that 99.4 percent maintained SN's greater than 29 at 60 million vehicle passes.

KENTUCKY ROCK ASPHALT

Kentucky rock asphalt was applied as surfacing, under Special Provisions 24 and 24A, during 1966, 1967, and 1968 (17). The last section was constructed, in 1968, under Special Provision 24B (18). More detailed information is given in APPENDIX A. Although this surface is not currently being applied in Kentucky, the skid resistance performance is useful for comparison.

Twenty projects were tested during 1975. Data are tabulated in APPENDIX C and plotted, along with the best-fit line, in Figure 8. Data were insufficient to determine initial skid resistance. Skid numbers decreased to about 56 after one million vehicle passes and continued decreasing to about 49 at ten million vehicles passes. The lower limit indicated that 99.4 percent of Kentucky rock asphalt pavement sections maintained SN's greater than 36 at nine million vehicle passes.

It should be noted that seven of the 20 sections were overlayed during 1977 and 1978. Another section was paralleled by the Audubon Parkway and became a lightly traveled, local road.

SAND-ASPHALT

Frictional levels of Sand-Asphalt surfaces constructed prior to 1970 were disappointing. Limestone sand obviously reduced the skid resistance (1, 19). Continued study demonstrated that better sands could be selected on the basis of mineral composition, gradation, and particle shape (20). Sand-Asphalt (Skid Resistant), Special Provision 59B, resulted. With continued refinement of

mineral composition and gradation, the mixture evolved into Sand-Asphalt Surface, Type I, and Sand-Asphalt Surface (Skid Resistant), Type II. More detailed information is given in APPENDIX A.

Sand-Asphalt, Type I -- Sand-Asphalt, Type I, is intended to provide a thin, fine-textured wearing surface from aggregates generally available from commercial sources. This mixture has been used since 1974 (then Special Provision 22D). Aggregates included natural sand, natural sand with slag sand, natural sand with limestone sand, pit sand with limestone sand, and slag sand with natural sand.

Skid tests were made each year on 17 projects. Data are tabulated in APPENDIX C and are plotted, along with the best-fit line, in Figure 9. Initial SN's were about 42. The skid resistance decreased slightly as the sections accumulated traffic. The best-fit line indicated a decrease in SN to 39 at ten million vehicle passes. Scatter caused the minus 2.5 standard deviations to drop to a SN of 24 at ten million vehicle passes. However much of the scatter resulted from combining data for different aggregate types.

Sand-Asphalt (Skid Resistant), Special Provision 59B -- Three adjacent sections of US 31W in Hardin and Meade Counties were surfaced in 1972 and 1973. The aggregate was crushed quartz gravel. Performance was expected to depend on the degree of crushing and sharpness achieved.

Skid tests were made frequently. Data are tabulated in APPENDIX C and are plotted, along with the best-fit line, in Figure 10. Skid numbers were about 47 after one million vehicle passes and decreased slowly to about 45 at ten million vehicle passes. The lower limit, determined by regression analysis, indicated that 99.4 percent of the SN's were greater than 35 up to ten million vehicle passes.

Sand-Asphalt (Skid-Resistant), Type II -- Sand-Asphalt (Skid Resistant), Type II, is fine-textured and has been used since 1974 (then Special Provision 59D). Aggregates included slag sand, slag sand

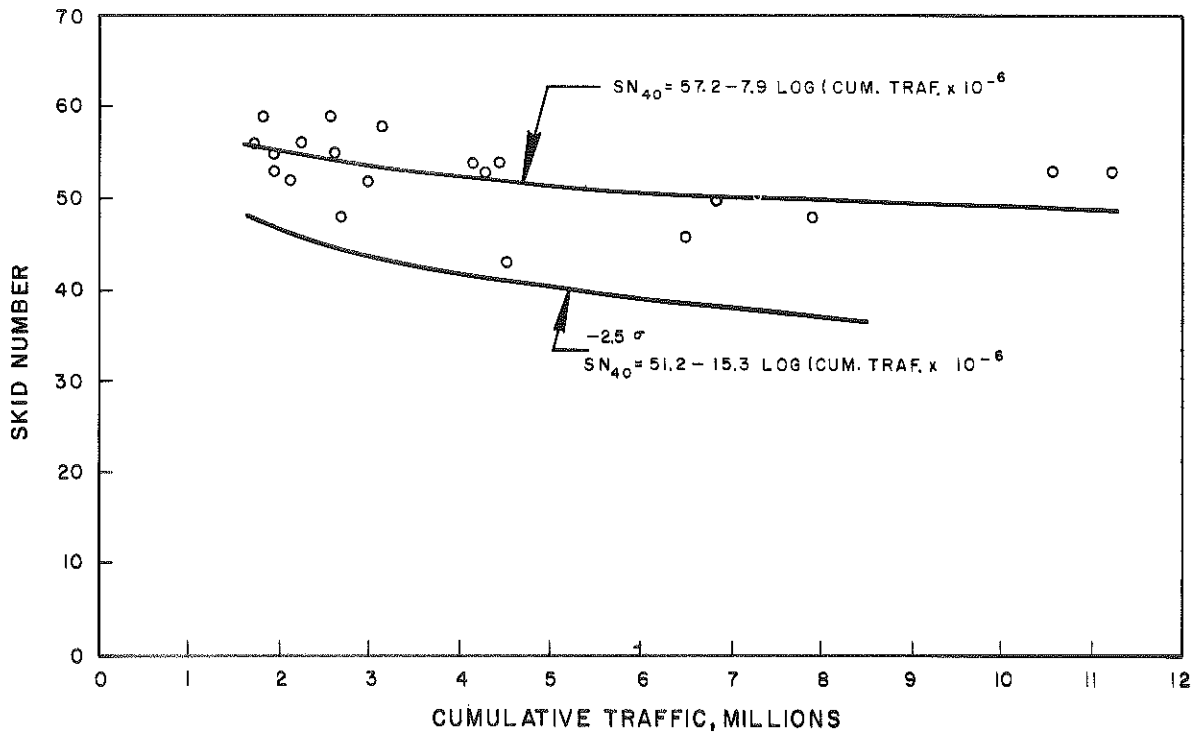


Figure 8. Effect of Traffic on Skid Resistance of Kentucky Rock Asphalt Surfaces.

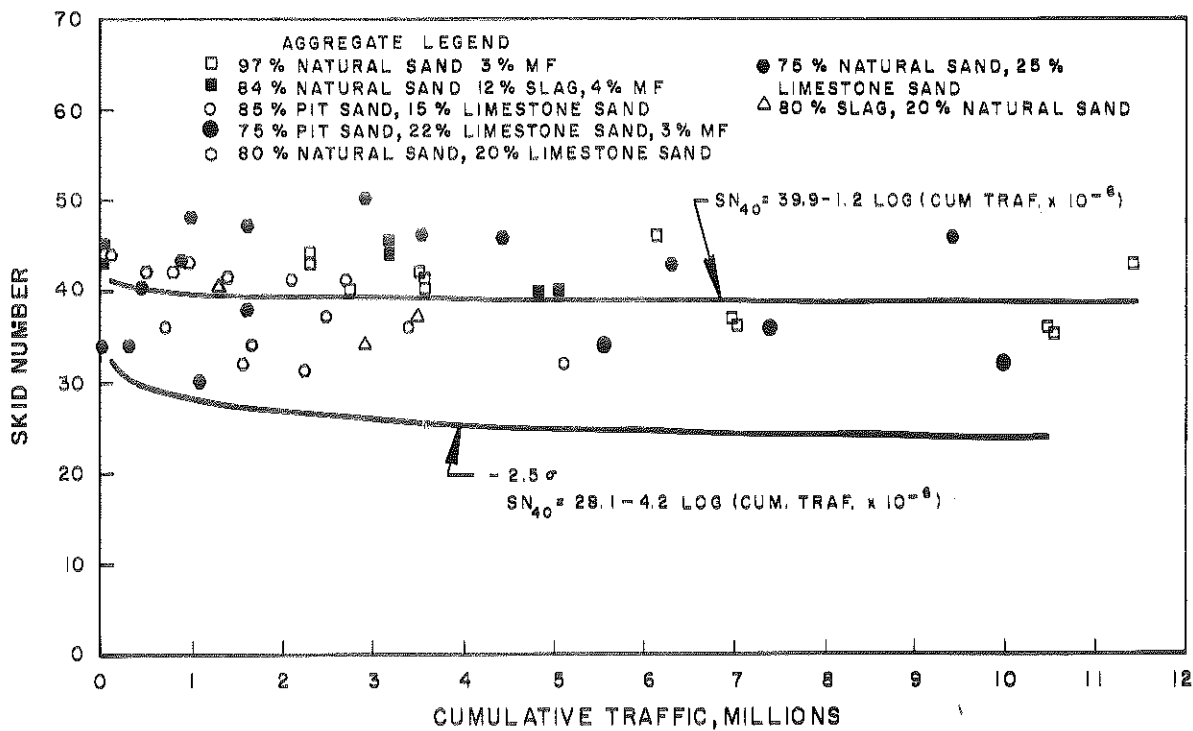


Figure 9. Effect of Traffic on Skid Resistance of Sand-Asphalt, Type 1, Surfaces.

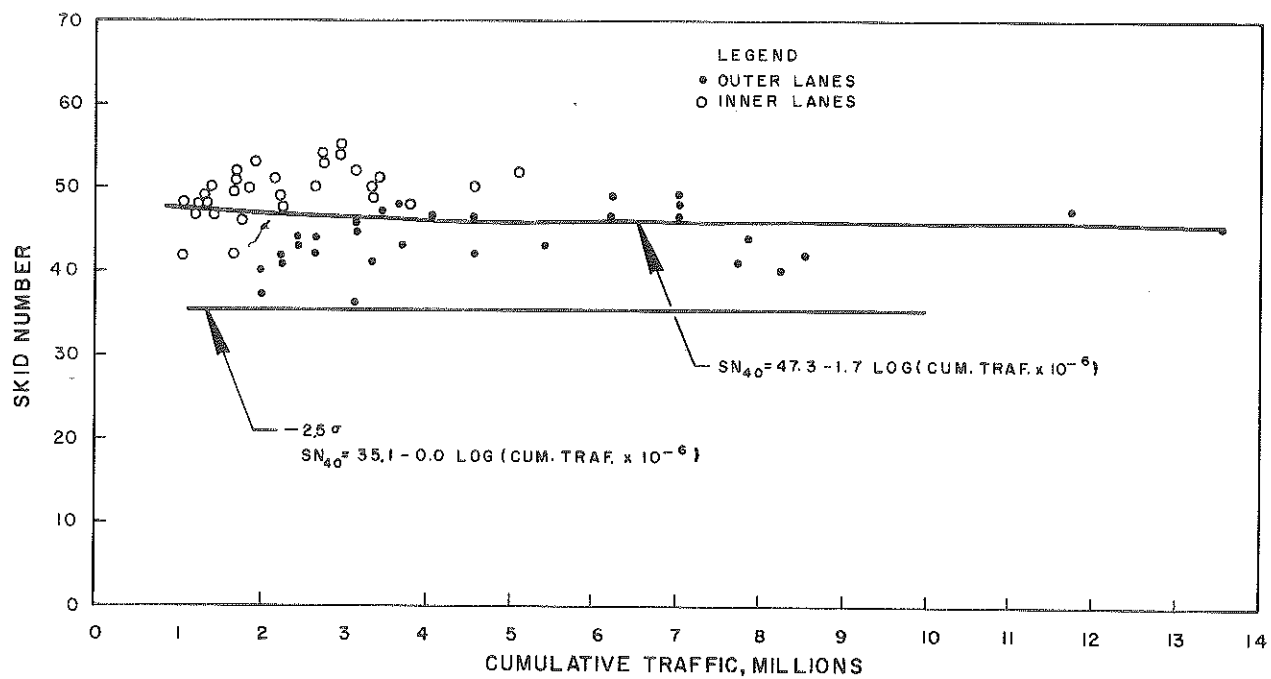


Figure 10. Effect of Traffic on Skid Resistance of Sand-Asphalt (Skid Resistant), Special Provision 59B, Surfaces.

with natural sand, quartz sand, quartz sand with mortar sand, and crushed gravel sand with crushed limestone sand.

Skid tests were made frequently on 26 projects. Data are tabulated in APPENDIX C. Several projects yielded low SN's. The data were then divided into two groups -- urban and rural. The resulting best-fit lines are plotted in Figures 11 and 12, rural and urban sections, respectively. Almost all of the low SN's were in urban areas. The reasons remain a point of conjecture and require further study.

The 16 sections in rural areas had initial SN's near 54 and maintained SN's near 46. The lower limit indicated that 99.4 percent of the sections had SN's greater than 34 at four million vehicle passes. The nine sections in urban areas had initial SN's near 44 and maintained SN's near 30. Of particular significance, however, was the considerable scatter of data. The lower limit for these sections was less than 14 at ten million vehicle passes.

OPEN-GRADED FRICTION COURSES

Open-graded friction courses (OGFC) were first used in Kentucky in 1973. Since then, over 50 sections have been paved. Most of these sections were Type 1 -- allowing aggregate sizes up to 1/2 inch (13 mm). Six of the sections were Type 2 -- allowing aggregate sizes up to 3/8 inch (10 mm). Aggregate included crushed gravel, crushed gravel with limestone aggregate, crushed slag, crushed granite, crushed conglomerate gravel, crushed conglomerate gravel with limestone aggregate, limestone with crushed gravel, limestone aggregate with crushed granite, lightweight aggregate, and crushed quartz. More detailed information is given in APPENDIX A. Skid-test results and other data are tabulated in APPENDIX C.

Results for Type 1 OGFC, crushed quartz gravel (Green River) aggregate, with and without limestone aggregate are plotted, along with best-fit line, in Figure 13. Initial SN's were less than 43. SN's increased to near 48 at one million vehicle passes and to near 53 at

ten million vehicle passes. The lower limit was initially lower but improved to 40 after ten million passes.

Results for crushed slag with and without limestone are plotted along with best-fit line in Figure 14. Initial SN's were about 53. After one million passes, the SN had decreased to 49. Mature values were about 44. There was sufficient scatter of data to result in a lower limit SN of 32 at 15 million passes.

Results for crushed gravel aggregate with and without limestone aggregate are plotted along with best-fit line in Figure 15. Initial SN's varied considerably -- from 37 to 68 -- with an average of about 54. They maintained an average SN near 50. The lower limit was a SN of 29 at five million passes.

Results for crushed granite are plotted along with best-fit line in Figure 16. The data were very limited, but indicated mature SN's greater than 50 and a lower limit of about 40.

Results for Type 2 OGFC for all aggregate types are plotted, along with best-fit line, in Figure 17. Limited data indicated mature SN's near 47. Data were insufficient to determine a lower limit.

At three locations, sections of the Type 1 OGFC were placed without limestone aggregate, and adjacent sections included limestone aggregate. US 62, Hardin County, had 100 percent crushed quartz gravel (Green River) in one section and 30 percent and 60 percent limestone aggregate, respectively, in the two adjacent sections. US 62, Grayson County, had near 100 percent crushed quartz gravel (Green River) in one section and 48 percent limestone aggregate in the two adjacent sections. The limestone aggregate in one of these sections was a high-carbonate type and in the other section was a low-carbonate, high-insoluble type. US 68, Marshall County, had 100 percent crushed bank gravel in one section and 30 percent and 60 percent limestone, respectively, in two adjacent sections. The SN's at two million vehicle passes for each of the nine sections are plotted in Figure 18.

Regression analyses indicated that

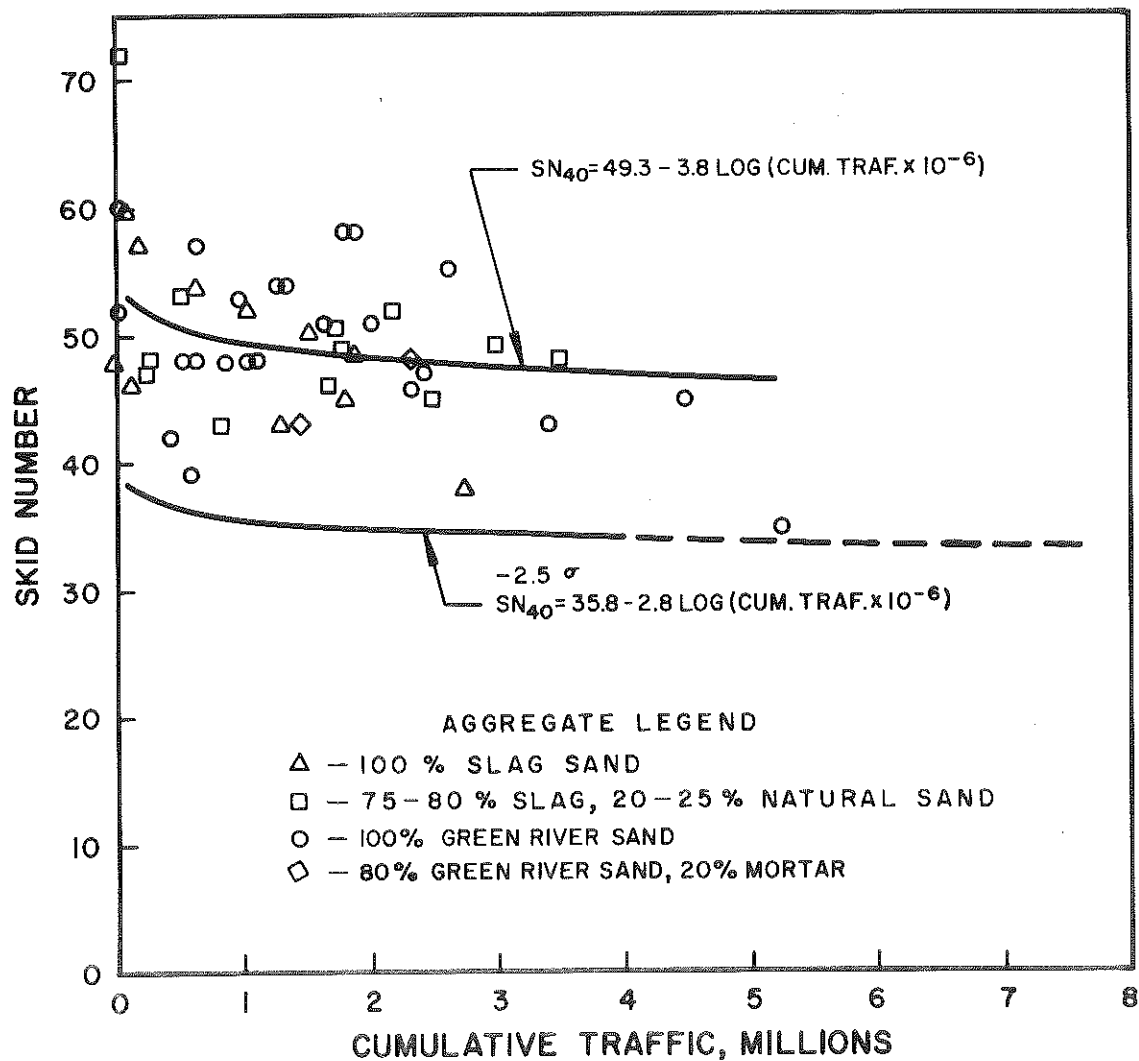


Figure 11. Effect of Traffic on Skid Resistance of Sand-Asphalt (Skid Resistant), Type II, Surfaces (Rural Areas).

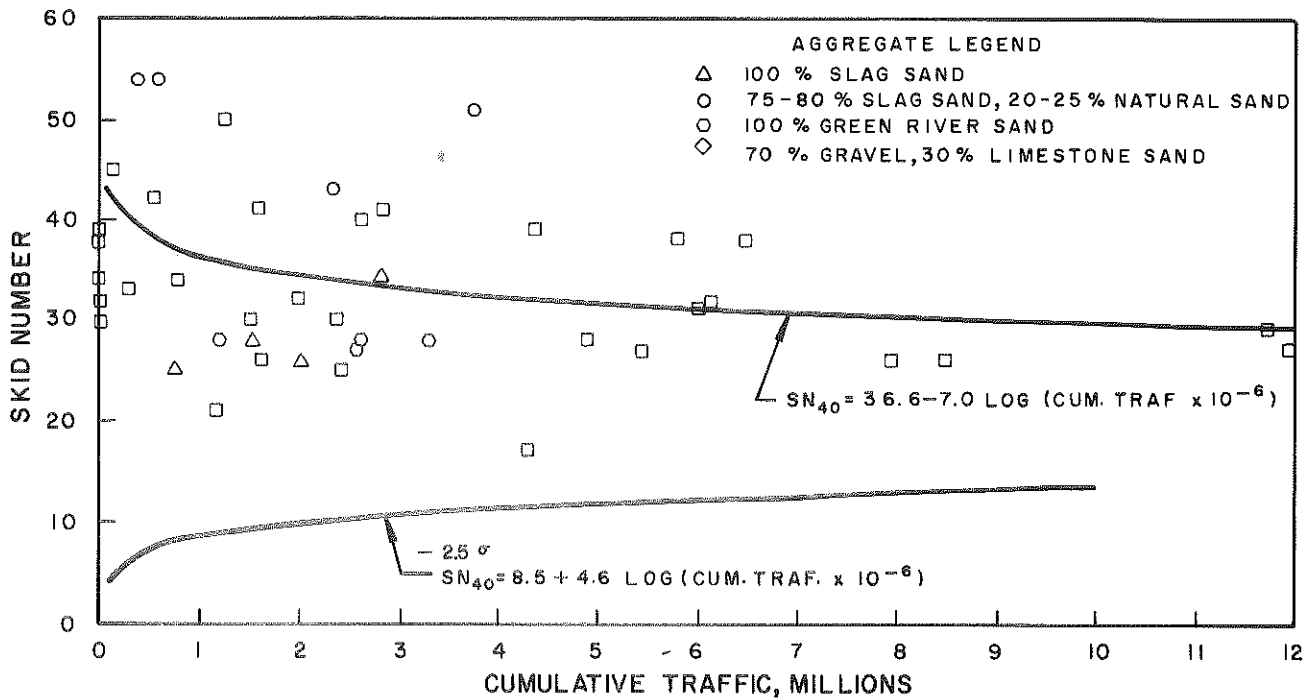


Figure 12. Effect of Traffic on Skid Resistance of Sand-Asphalt (Skid Resistant), Type II, Surfaces (Urban Areas).

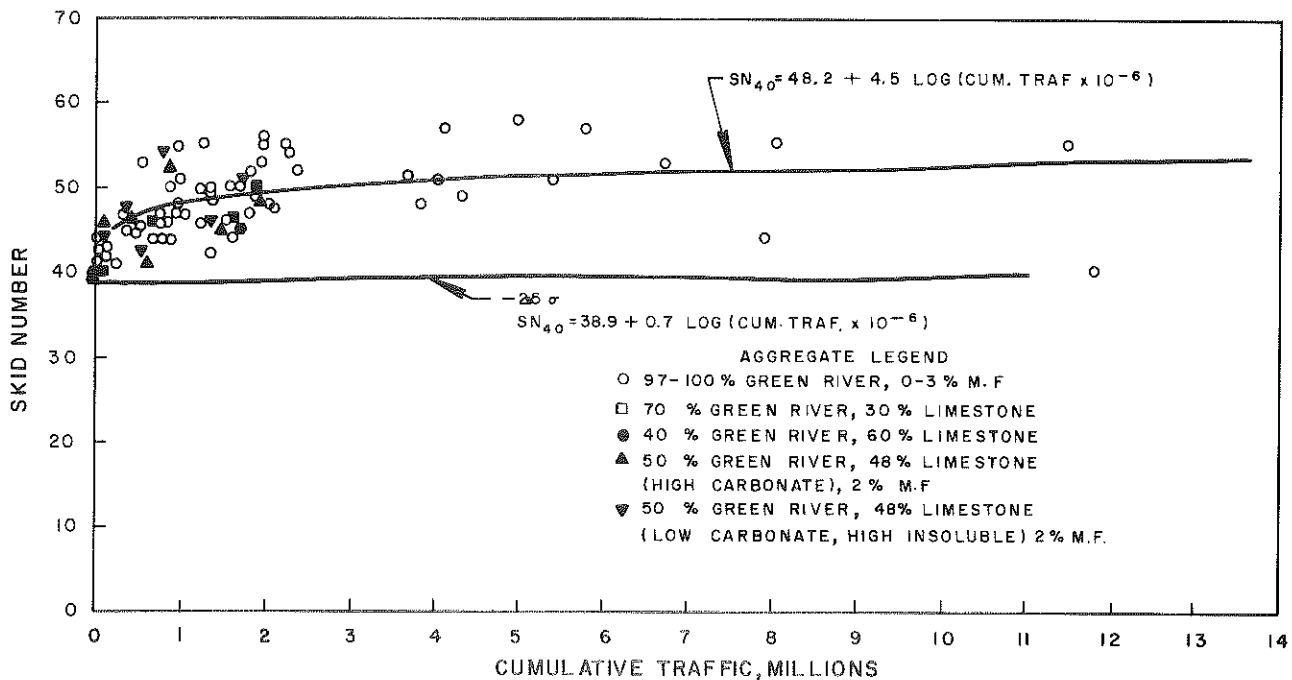


Figure 13. Effect of Traffic on Skid Resistance of Open-Graded Friction Courses, Type I -- Crushed Quartz Gravel (Green River).

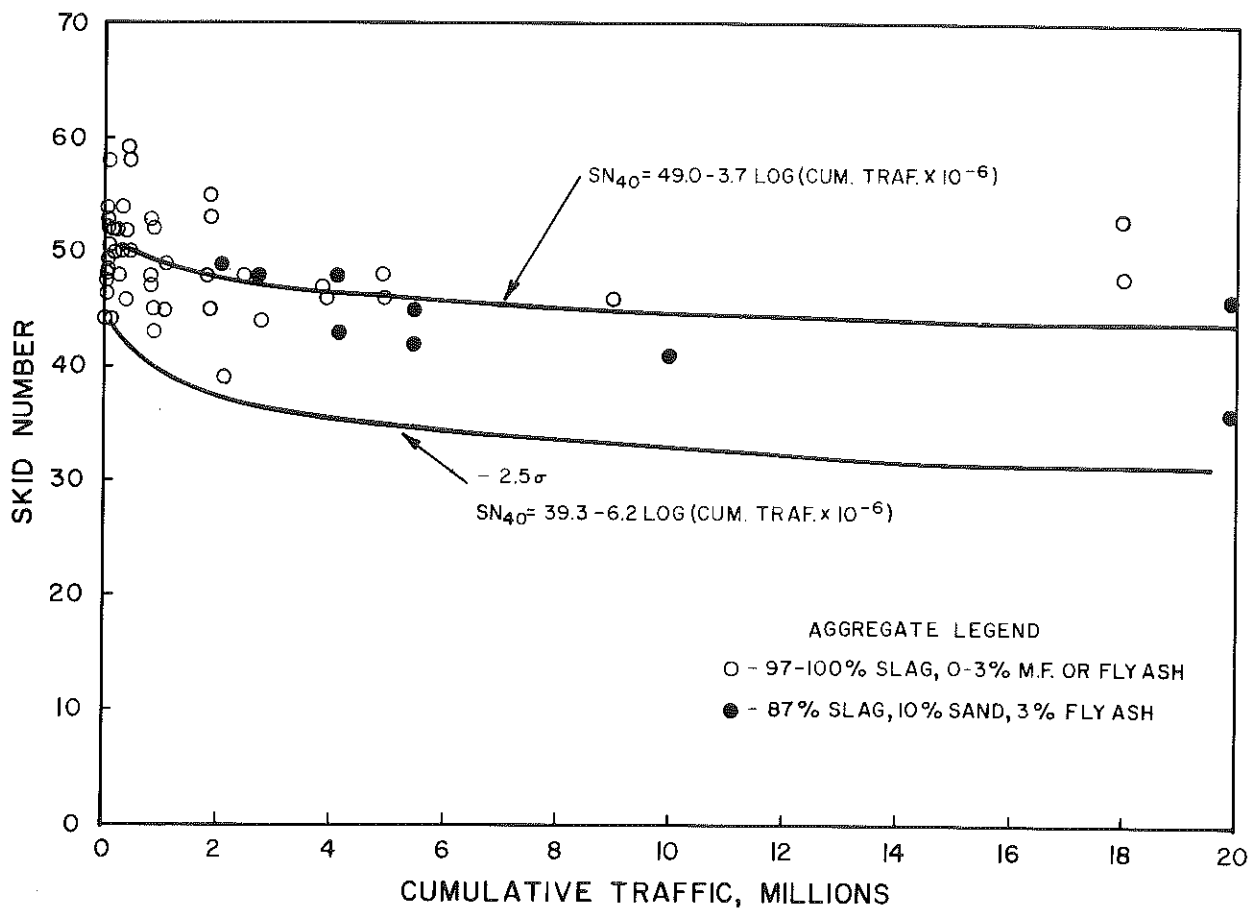


Figure 14. Effect of Traffic on Skid Resistance of Open-Graded Friction Courses, Type 1 -- Crushed Slag.

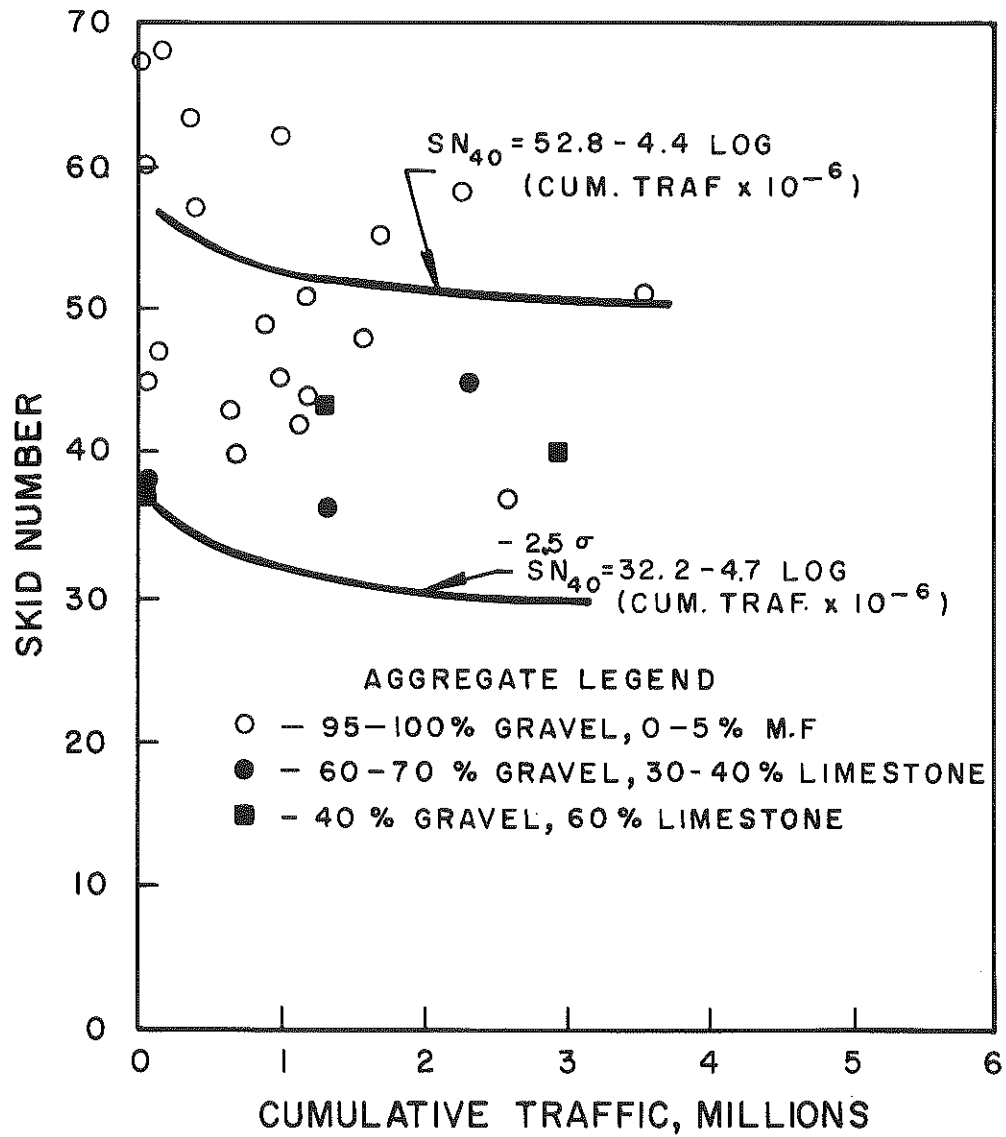


Figure 15. Effect of Traffic on Skid Resistance of Open-Graded Friction Courses, Type 1 -- Crushed Gravel.

Figure 16. Effect of Traffic on Skid Resistance of Open-Graded Friction Courses, Type 1 -- Crushed Granite.

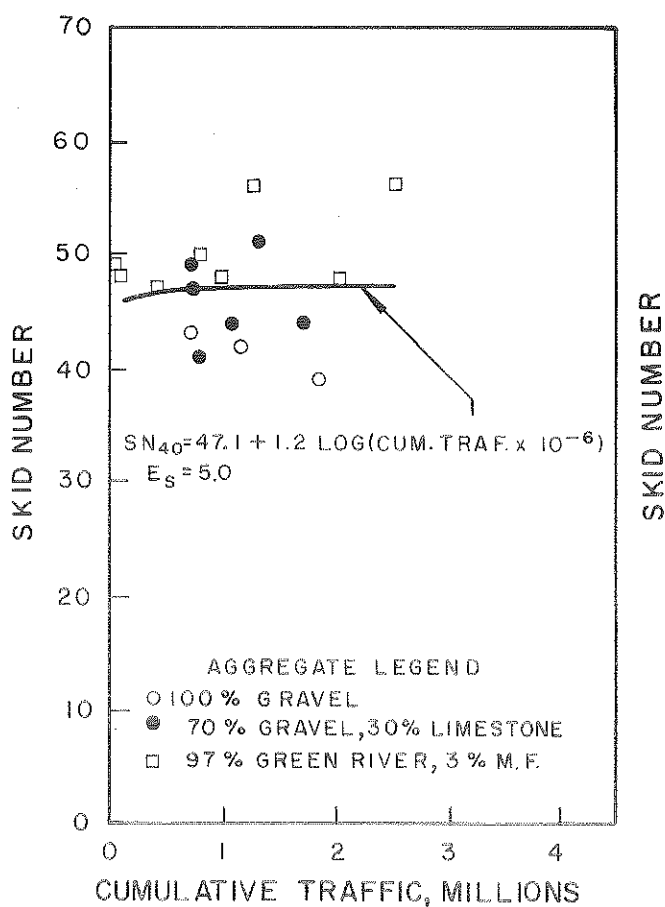
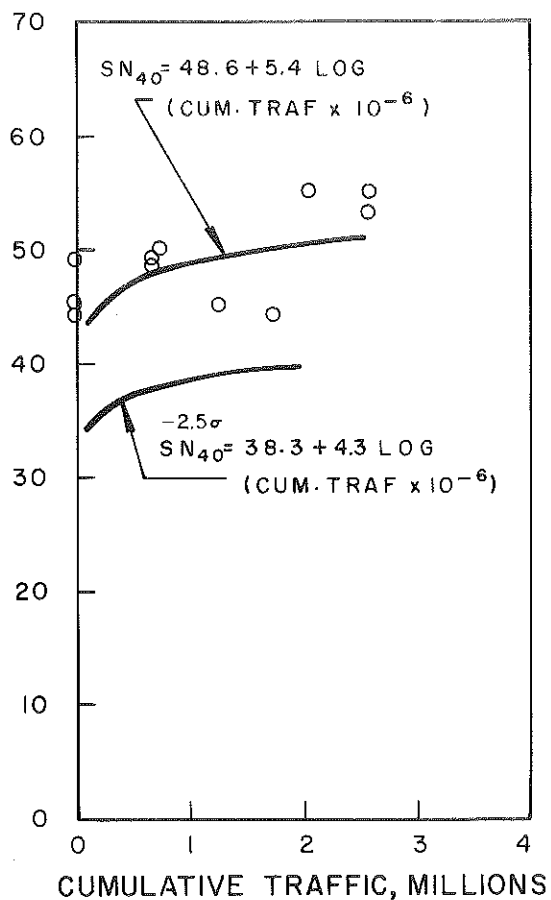


Figure 17. Effect of Traffic on Skid Resistance of Open-Graded Friction Courses, Type 2.

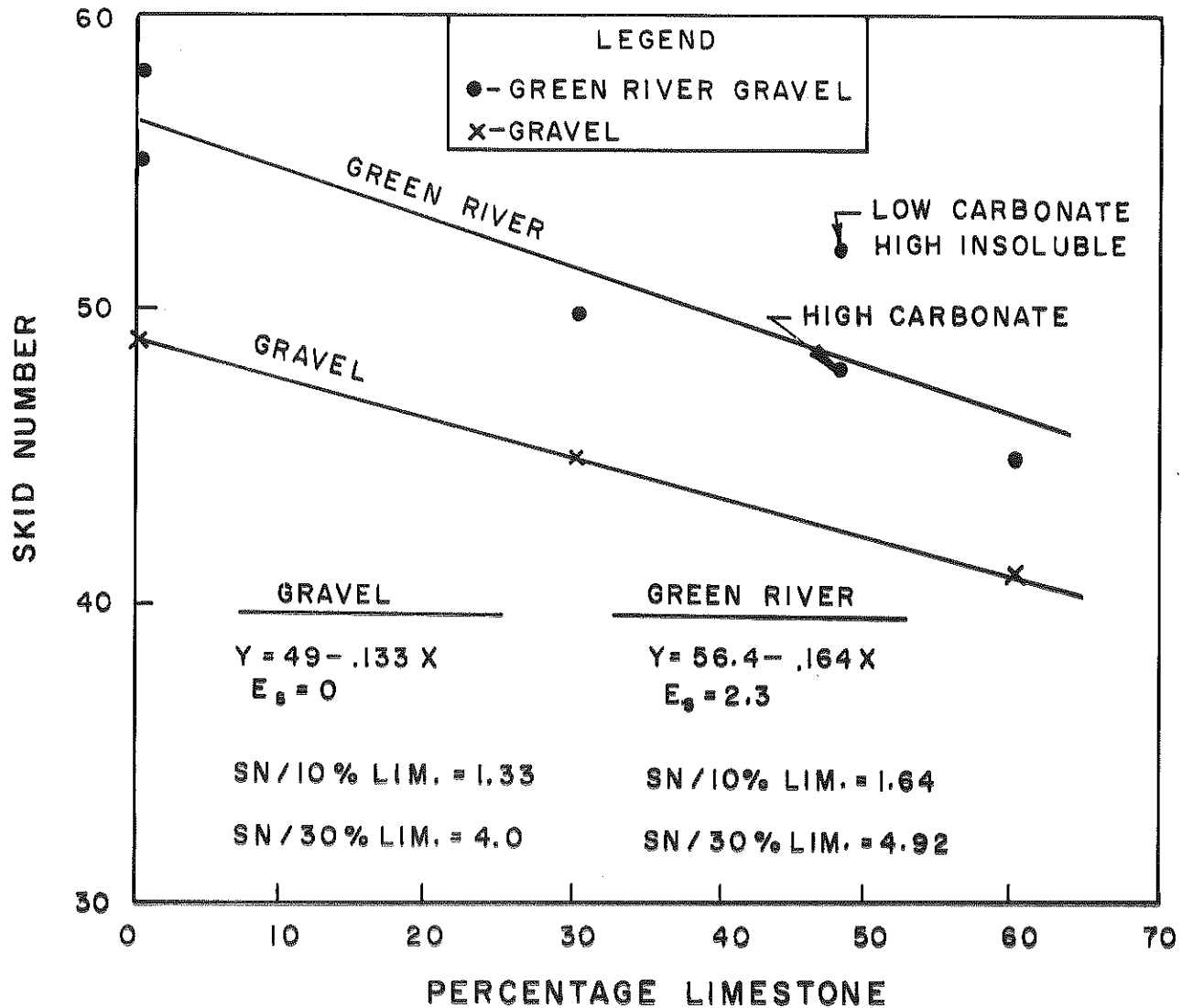


Figure 18. Effect of Limestone Sand on Skid Resistance of Open-Graded Friction Courses, Type 1, at Two Million Vehicle Passes.

limestone aggregate reduced the skid resistance of the Type 1 OGFC using crushed quartz gravel (Green River) by 1.64 SN for each ten percent of limestone aggregate in the mixture. The low-carbonate, high-insoluble limestone performed slightly better than average -- reducing the skid resistance by 1.25 SN for each ten percent of limestone aggregate in the blend. The high-carbonate limestone performed slightly worse than average -- reducing the skid resistance by 2.0 SN for each ten percent of limestone aggregate in the blend.

Limestone aggregate reduced the skid resistance of the Type 1 OGFC using crushed bank gravel by 1.33 SN for each ten percent of limestone used.

SURFACE TREATMENTS

Other surface treatments are being evaluated, but skid data are limited. One treatment was to sprinkle precoated aggregates onto a freshly laid bituminous surface. Hard, angular, polish-resistance aggregates was used. These included quartzite, slag, quartz, and granite. A description of this treatment is in APPENDIX A. Skid tests are tabulated in APPENDIX C. Tests about a month after the sprinkle treatment was applied showed SN's from 46 to 50. Tests one year later indicated the skid resistance of all sections, including the control section (Class I), had increased. Unfortunately, traffic volumes were different for each section (3,800 to 7,700), even though sections adjoin each other. Final performance comparisons, at this time, would be premature.

Another treatment that can be used in altering skid resistance of pavements is milling. This procedure is described in APPENDIX A. Its use in Kentucky has been primarily for eliminating ruts in bituminous pavements prior to overlaying. Milling (here) produces a coarse texture and exposes fresh, unpolished aggregates. Milling of an interstate section improved the skid resistance from SN's in the low 30's to the high 40's. Because the section was overlaid within a year, long-term performance could not be ascertained.

BENEFITS AND COSTS

BENEFITS

Benefits herein were derived from calculations of the reduction in the number of wet-pavement accidents. The reduction depends on the previous SN of the road, the SN after de-slicking and the traffic volume. To quantify these relationships, wet-pavement accidents per mile (km) during 1979, on roads skid tested in 1977 and 1978, were analyzed. The data were stratified by AADT and each AADT group was subdivided, by equal number of wet-pavement accidents, into six groups. The resulting values and best-fit lines are shown in Figure 19. Here, SN was the independent variable. The three curves were also converted so that traffic volume was the independent variable, and the resulting family of curves is shown in Figure 20. These relationships show, for example, that, if a road with a SN of 20 and AADT of 8,000 were de-slicked and improved to a SN of 40, wet-pavement accidents would be reduced from 4.4 to 1.5 per mile (2.8 to 1.0 per km) per year and result in a benefit of \$18,850 per mile (\$11,700 per km) per year. The average cost of a wet-pavement accident was calculated based on accidents on rural, two-lane roads in Kentucky and cost of fatal, injury, and property-damage-only accidents cited by the National Safety Council (21).

Performance evaluation of pavements has shown that SN's obtained vary considerably for each type of surface. Thus, to ascertain benefits expected, the deviations of SN's expected must be included. The analysis used the mean SN and three standard deviations for each surface at the cumulative traffic corresponding to the half-life of the pavement (see Table 3) and at the three levels of AADT cited in Figure 19. These distributions were combined with the curves of Figure 19 to yield the number of wet-pavement accidents per mile (km) per year expected after surface renewal. This value was subtracted from the number of wet-pavement accidents before surface renewal, indicated in Figure 19, for

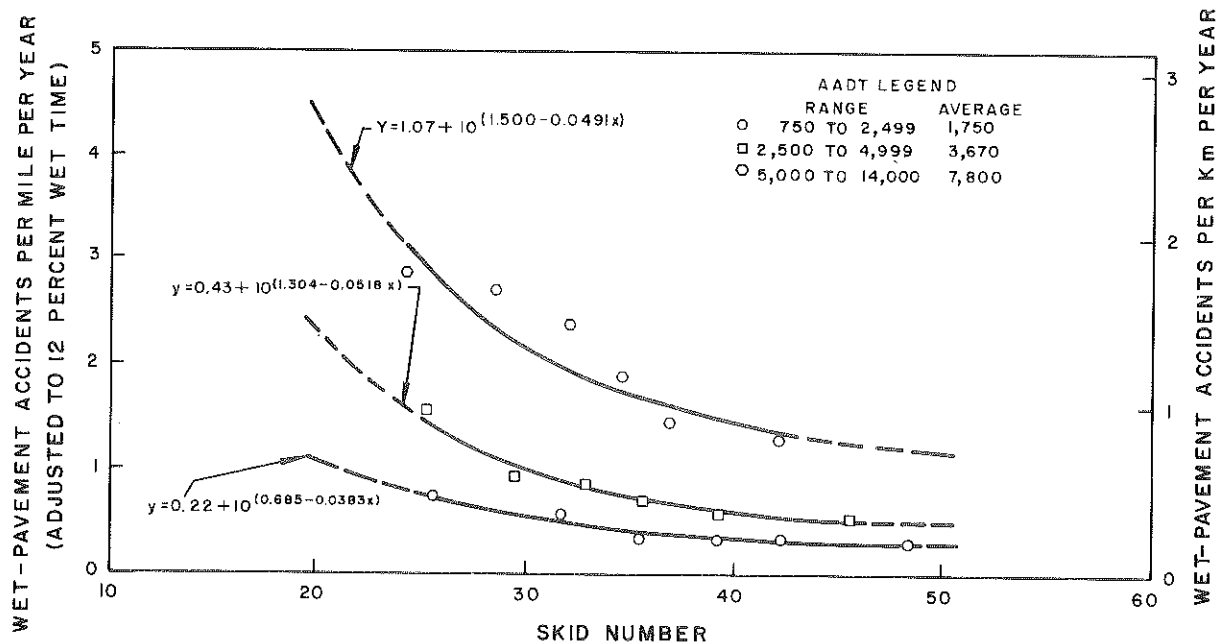


Figure 19. Wet-Pavement Accidents per Mile (km) per Year (Adjusted to 12 Percent Wet Time) versus Skid Number (1979); 1,132 Sections (about 4,400 miles (7,100 km)) of Rural, Two-Lane Roads; Stratified by AADT; Grouped by Equal Number of Wet-Pavement Accidents.

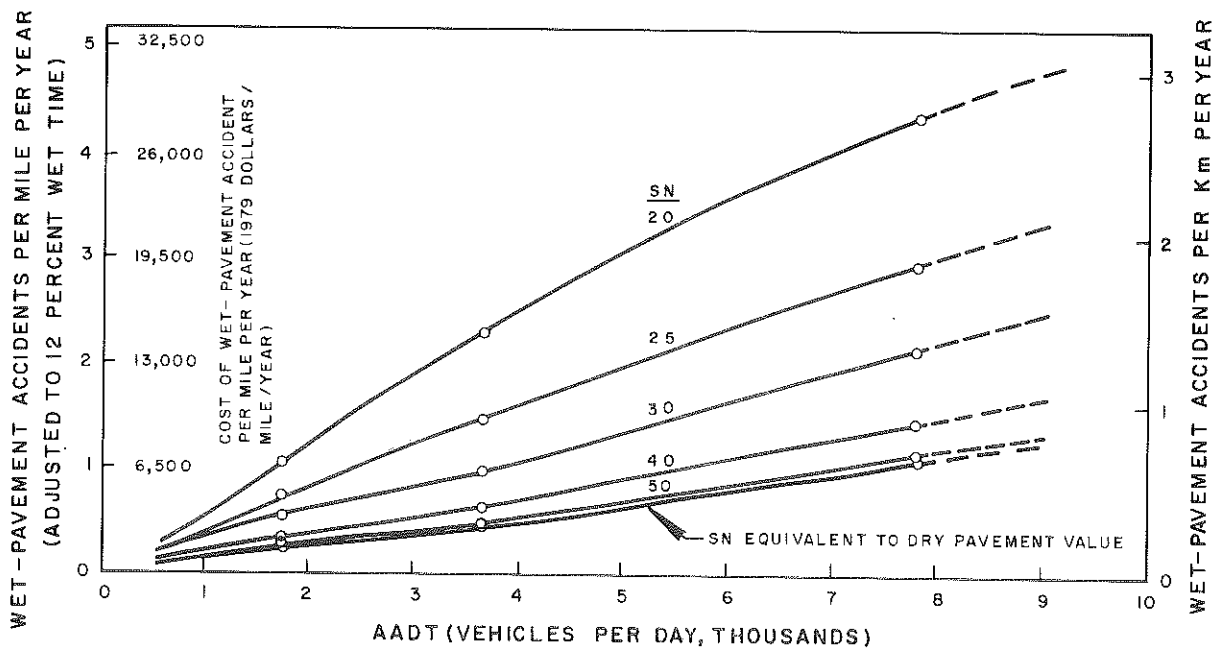


Figure 20. Wet-Pavement Accidents per Mile (km) per Year (Adjusted to 12 Percent Wet Time) (1979), from Best-Fit Curves of Figure 19, versus Traffic Volume.

TABLE 3. MEAN SKID NUMBER OF PAVEMENTS AND STANDARD DEVIATION AT INDICATED CUMULATIVE TRAFFIC

AADT RANGE	750 - 2,499		2,500 - 4,999		5,000 - 14,000	
AADT AVERAGE	1,750		3,670		7,800	
HALF-LIFE (YEARS)	7.1		6.1		4.1	
CUMULATIVE TRAFFIC (MILLIONS)	2.3		4.1		5.8	
PAVEMENT	MEAN SN	STANDARD DEVIATION	MEAN SN	STANDARD DEVIATION	MEAN SN	STANDARD DEVIATION
Class I, Bituminous, Interstate & Toll Roads:						
AADT 1,000 - 2,499	45.4	4.3	---	---	---	---
AADT 2,500 -46,120	---	---	42.9	6.5	41.8	6.2
Class I, Bituminous, US & KY Roads:						
AADT 1,000 - 2,499	40.7	4.9	---	---	---	---
AADT 2,500 -34,000	---	---	39.0	6.1	38.7	6.1
Sand-Asphalt, Type I	39.5	5.2	39.2	5.5	39.0	5.6
Sand-Asphalt, Type II:						
(Rural)	47.9	5.2	47.0	5.2	46.4	5.1
(Urban)	34.1	9.6	32.3	8.4	31.3	7.7
Open-Graded, Friction Course, Type 1:						
Green River Gravel	49.8	4.2	51.0	4.6	51.6	4.8
Slag	47.7	4.3	46.7	4.5	46.2	4.7
Gravel	51.2	8.3	50.1	8.3	49.4	8.3
Granite	50.6	4.3	51.9	4.4	52.7	4.4

several SN's. The differences times the average cost of a wet-pavement accident in Kentucky in 1979 (\$6,500) yielded the benefits per mile (km) per year.

COSTS

Initial costs (1979 dollars) of the various surface courses for the minimum thicknesses required for surface renewal are cited in Table 4. Those costs are for a 24-foot (7.3-m) wide two-lane road and do not include leveling or other incidental work.

The other essential input for determining cost is the estimated service life. The service life, for the ranges of AADT cited in Figure 19, were estimated as 14, 12, and 8 years; for low, medium, and high values of AADT, respectively. Dividing the cost by the estimated life and allowing a ten-percent cost per year of money gave the estimated costs per mile (km) per year as cited in Table 4.

BENEFIT-COST ANALYSIS

The benefit-cost ratios (Table 5) indicated that use of any surface is cost effective for surface renewal if the AADT is greater than 2,500 and the existing SN's are low. In fact, if an existing pavement with an AADT of 5,000 or more has a SN as high as 34, application of an overlay using Open-Graded Friction Course, Type 1, yields a ratio of 1.0. Thus, from a cost-effectiveness perspective, efforts should continue, as in the past, to use available monies to de-slick pavements with the lowest SN's to reduce wet-pavement accidents the most and achieve the greatest benefits.

In most cases, surfaces yielding the highest benefit-cost ratios should be selected for the overlay. The Open-Graded Friction Course provides the best ratio. However, if future costs change or vary for certain locations, another surface may be selected. Additionally, other considerations may warrant selection of other surfaces. Ultimately, benefit and cost information should be an input to priority programming of a pavement management system.

SUMMARY

Statistical equations were used to relate skid numbers and various surfaces at different levels of cumulative traffic (Table 6). The estimated SN's at 0.1, 1, 5, 10, and 60 million vehicle passes represent median values for each type of pavement -- half of the sections had higher SN's and half lower SN's. The highest median SN's were for open-graded friction course, Type 1, with crushed Green River gravel. The other pavements had SN's of 38 or higher, except for Sand-Asphalt, Type II, constructed in urban areas. The SN's at minus 2.5 standard deviations represent values that are exceeded by 99.4 percent of the paving projects. These values are presented in Figure 21 and provide an indication of worst-case performance.

Present criteria for identifying pavements in need of de-slicking (11) specifies that any highway section with an AADT greater than 1,000 vehicles per day should be de-slicked if the SN is 28 or less. In addition, highway sections with SN's between 29 and 32 would qualify if the accident experience indicated a wet-to-dry-pavement accident ratio of at least 0.30. The criterion for new pavements specifies that the mature SN of a surface, at minus 2.5 standard deviations (99.4 percent assurance), must exceed 32. Class I bituminous and portland cement concrete pavements (burlap drag texturing) with AADT's greater than 2,500 and Sand-Asphalt (Type I) pavements did not provide the necessary assurance of SN's greater than 32. Class I bituminous (interstate and toll-road quality) and portland cement concrete, with AADT's less than 2,500 (not shown in Figure 21) provided suitable SN's throughout their lives. Open-graded friction courses with Green River aggregate provided suitable SN's through the number of vehicle passes accumulated to date and, by interpolation, through the life of the pavement. Open-graded friction courses with slag aggregate provided adequate SN's through 12 million vehicle passes. For 8-year service life, this surface is suitable for roads with

TABLE 4. COST OF VARIOUS SURFACE COURSES

SURFACE MIX	COARSE AGGREGATE (INCHES)	THICKNESS (MM)	TONS PER MILE(KM)	DOLLAR COST (1979)		COSTS PER MILE(KM) PER YEAR (THOUSANDS)		
				PER TON(TON)	PER MILE(KM)*	LOW AADT	MED AADT	HIGH AADT
Class I, Bituminous Limestone		1 (25)	774 (436)	24.38 (22.12)	18,866 (11,725)	5.14 (3.20)	4.95 (3.08)	5.02 (3.12)
Class I, Bituminous Crushed Gravel		1 (25)	767 (432)	23.52 (21.34)	18,043 (11,214)	4.92 (3.06)	4.74 (2.94)	4.80 (2.98)
Class I, Bituminous Slag		1 (25)	718 (405)	22.87 (20.75)	16,422 (10,206)	4.48 (2.78)	4.31 (2.68)	4.37 (2.71)
Class AA, Bituminous Crushed Gravel		1 (25)	774 (436)	29.40 (26.67)	22,756 (14,143)	6.20 (3.85)	5.98 (3.71)	6.05 (3.76)
Open-Graded, Friction Course	Various	3/4 (19)	458 (258)	29.50 (26.76)	13,511 (8,397)	3.68 (2.29)	3.55 (2.21)	3.59 (2.23)
Sand-Asphalt, Type I	----	5/8 (16)	458 (258)	32.19 (29.20)	14,741 (9,162)	4.02 (2.50)	3.87 (2.41)	3.92 (2.44)
Sand-Asphalt, Type II	----	5/8 (16)	458 (258)	29.85 (27.08)	13,671 (8,497)	3.73 (2.32)	3.59 (2.23)	3.63 (2.26)

* Cost for a 24-foot (7.3 m) wide, two-lane road;
does not include leveling or other incidental work.

TABLE 5. BENEFIT-COST RATIOS FROM OVERLAYING

PAVEMENT	AADT*	WET/MILE (KM) EXPECTED**	SKID NUMBER BEFORE OVERLAYING										
			20	22	24	26	28	30	32	34	36	38	40
Class I, Bituminous, Interstate & Toll Roads:	LOW	0.32 (0.20)	0.9	0.8	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.1
	MED	0.64 (0.40)	2.2	1.7	1.3	1.0	0.7	0.5	0.4	0.3	0.2	0.1	0.0
	HIGH	1.48 (0.92)	3.8	3.0	2.3	1.7	1.3	0.9	0.6	0.4	0.2	0.1	0.0
Class I, Bituminous, US & KY Roads:	LOW	0.40 (0.25)	0.9	0.7	0.6	0.4	0.3	0.3	0.2	0.1	0.1	0.0	---
	MED	0.70 (0.44)	2.1	1.6	1.2	0.9	0.6	0.4	0.3	0.1	0.0	0.0	---
	HIGH	1.60 (1.00)	3.6	2.8	2.1	1.5	1.1	0.7	0.4	0.2	0.0	---	---
Sand-Asphalt, Type I	LOW	0.40 (0.25)	1.1	0.9	0.7	0.5	0.4	0.3	0.2	0.1	0.1	0.0	0.0
	MED	0.68 (0.42)	2.7	2.1	1.6	1.1	0.8	0.6	0.4	0.2	0.1	0.0	---
	HIGH	1.56 (0.98)	4.0	3.6	2.7	2.0	1.4	1.0	0.6	0.4	0.1	0.0	---
Sand-Asphalt, Type II (Rural)	LOW	0.32 (0.20)	1.3	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.1
	MED	0.53 (0.33)	3.2	2.5	1.9	1.5	1.1	0.9	0.6	0.5	0.3	0.2	0.1
	HIGH	1.28 (0.80)	5.6	4.4	3.4	2.6	2.0	1.6	1.2	0.9	0.6	0.4	0.3
(Urban)	LOW	0.63 (0.39)	0.9	0.6	0.4	0.3	0.1	0.0	---	---	---	---	---
	MED	1.21 (0.77)	2.1	1.4	0.8	0.4	0.0	---	---	---	---	---	---
	HIGH	2.50 (1.56)	3.5	2.3	1.4	0.6	0.0	---	---	---	---	---	---
Open-Graded, Friction Course, Type 1: Green River Gravel	LOW	0.27 (0.17)	1.4	1.1	0.9	0.8	0.6	0.5	0.4	0.3	0.3	0.2	0.1
	MED	0.48 (0.30)	3.3	2.6	2.0	1.6	1.2	0.9	0.7	0.5	0.4	0.3	0.2
	HIGH	1.17 (0.73)	5.8	4.6	3.6	2.8	2.2	1.7	1.4	1.0	0.8	0.6	0.4
Slag	LOW	0.32 (0.20)	1.3	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.1
	MED	0.54 (0.34)	3.2	2.5	2.0	1.5	1.2	0.9	0.6	0.5	0.3	0.2	0.1
	HIGH	1.29 (0.81)	5.6	4.4	3.4	2.7	2.1	1.6	1.2	0.9	0.6	0.4	0.3
Gravel	LOW	0.29 (0.18)	1.4	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.1
	MED	0.51 (0.32)	3.3	2.5	2.0	1.5	1.2	0.9	0.7	0.5	0.4	0.3	0.2
	HIGH	1.25 (0.78)	5.6	4.4	3.5	2.7	2.1	1.6	1.2	0.9	0.7	0.5	0.3
Granite	LOW	0.27 (0.17)	1.4	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2
	MED	0.47 (0.29)	3.3	2.6	2.0	1.6	1.2	0.9	0.7	0.6	0.4	0.3	0.2
	HIGH	1.15 (0.72)	5.8	4.6	3.6	2.9	2.2	1.8	1.4	1.1	0.8	0.6	0.4

* Refer to legend of Figure 19.

** Wet-pavement accidents per mile(KM) per year after overlaying.

NOTE: Benefits from reduction of wet-pavement accidents only.

TABLE 6. SKID NUMBER AT SEVERAL VALUES OF CUMULATIVE TRAFFIC FOR VARIOUS TYPES OF PAVEMENTS

PAVEMENT	EFFECTIVE AADT		NO. OF SECTIONS	NO. OF DATA POINTS	SKID NUMBER					MINUS 2.5 **
	RANGE	AVERAGE			CUMULATIVE TRAFFIC-MILLIONS					
					0.1	1	5	10	60	
Class I, Bituminous:										
Interstate & Toll Roads	1,000- 2,499	1,560	43	83	50	46	45	44*	--	34*
	2,499-46,120	8,380	41	95	50	47	42	40	35	26
US & KY Roads	1,000- 2,499	1,770	100	99	45	42	39	38*	--	29*
	2,499-34,000	5,080	130	132	45	40	39	38	37*	23
Portland Cement Concrete	1,000- 2,499	2,070	46	68	55	49	48	48*	--	34*
	2,499-38,200	9,490	167	499	55	49	44	41	35	26
Kentucky Rock Asphalt	1,180- 7,590	2,950	20	20	--	57	52	49	--	36
Sand-Asphalt, Type I	690-20,130	8,680	17	58	42	40	39	39	--	24
Sand-Asphalt, S.P. 59B	4,000-14,550	8,900	3	58	--	47	46	46	--	35
Sand-Asphalt, Type II:										
	(Rural)	300-10,560	16	49	54	49	47	45*	--	33*
(Urban)	1,040-18,650	8,040	9	39	44	37	32	30	--	13
Open-Graded, Friction										
Course, Type 1:										
Green River Gravel	2,220-19,400	6,610	10	63	42	48	51	53	--	40
Slag	400-43,610	12,030	12	48	53	49	46	45	--	33
Gravel	1,100-10,400	6,680	6	21	57	53	50*	48*	--	28*
Granite	5,300-11,500	6,520	7	6	45	49	52*	--	--	43*
Type 2: All Aggregate	2,400- 6,900	3,360	6	16	45	47	48*	--	--	--

* Extrapolated using best-fit equation.

** At 10 million vehicle passes.

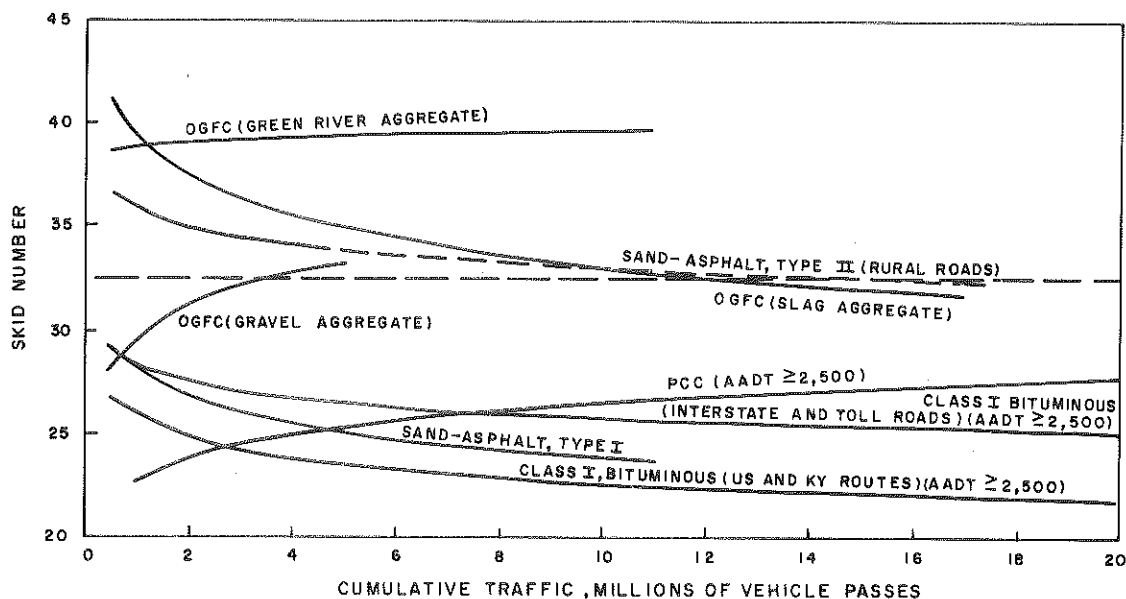


Figure 21. Minus 2.5 Standard Deviations (99.4-Percent Assurance) for Several Pavement Types.

AADT less than 8,200 (see Figure 3). Conversely, if applied to a road with AADT of 11,000 vehicles per day, the surface may exhibit SN's of 32 or less after only 6 years and may require surface renewal at that time. Open-graded friction course, with other gravel aggregate, provided necessary assurance against low SN's to one million vehicle passes; however, data were too limited to allow final assessment. Sand-Asphalt, Type II, on rural roads, provided adequate SN's through 15 million vehicle passes. For 8-year service life, this corresponds to an AADT of 10,300.

Service life has been estimated based on AADT (see Table 3). Using current costs of overlay (see Table 4), benefit-cost analyses indicated that overlaying an existing pavement having an SN less than 35 and AADT greater than 5,000 yields benefits from reduction of wet-pavement accidents to equal or exceed the cost of the overlay. Benefits also exceeded costs for roads with SN's less than 30 and AADT greater than 2,500 and for roads with SN's less than 24 and AADT greater than 750. Additional benefits (12), which may be included in an expanded analysis, include increased comfort, time savings, fuel savings, maintenance savings, and reduction of other types of accidents.

A minimum SN of 28, for roads with more than 1,000 vehicles per day, has been recommended to safeguard the public from undue hazards associated with slippery pavements regardless of the accident history of the road. Also, as indicated from the relationship between skid resistance and cumulative traffic, the best surface does not assure mature SN's above 45. Thus, criteria for the design of surface courses concern primarily the range of SN's between 28 and 45. The percentages of pavement sections estimated to equal or exceed, at 10 million vehicle passes, these values were determined (see Table 7). At least 95 percent of all pavement sections -- except Sand-Asphalt, Type II (urban) -- provided SN's greater than or equal to a SN of 28. However, if the level of skid resistance required is SN of 32 and the desired percentage level is again 95 percent, then Class I bituminous (high AADT roads) and Sand-Asphalt, Type I -- in addition to Sand-Asphalt, Type II (urban) -- are not suitable. The percentages are useful for selecting pavement types to meet different requirements and to assure due margin of safety. Other criteria for selecting surface courses include speed gradients (see Figure 4) and seasonal variations in skid resistance (see Table 2).

TABLE 7. PERCENT OF PAVEMENT SECTIONS WITH SKID NUMBER EQUAL TO OR EXCEEDING
SELECTED MINIMUM VALUE AT 10 MILLION VEHICLE PASSES

PAVEMENT	MINIMUM SKID NUMBER AT 10 MILLION VEHICLE PASSES																	
	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Class I, Bituminous, Interstate & Toll Roads:																		
AADT 1,000- 2,499	100	100	100	100	100	99	99	98	97	96	93	90	85	79	72	64	55	<50
AADT 2,500-46,120	98	98	96	95	93	90	86	82	77	71	65	58	50	<50	--	--	--	--
Class I, Bituminous, US & KY Roads:																		
AADT 1,000- 2,499	99	99	98	97	95	92	87	80	72	62	52	<50	--	--	--	--	--	--
AADT 2,500-34,000	95	93	90	87	84	80	75	70	64	58	51	<50	--	--	--	--	--	--
Portland Cement Concrete:																		
AADT 1,000- 2,499	100	100	100	100	100	99	99	98	98	97	95	93	91	88	85	81	76	70
AADT 2,500-38,200	99	98	97	96	95	93	90	86	83	78	72	66	60	53	<50	--	--	--
Kentucky Rock Asphalt	100	100	100	100	100	100	100	100	99	99	98	97	96	94	91	88	84	79
Sand-Asphalt, Type I	97	95	93	90	87	85	79	75	68	61	54	<50	--	--	--	--	--	--
Sand-Asphalt, SP 59B	100	100	100	100	100	100	99	99	99	98	96	94	91	86	80	73	65	56
Sand-Asphalt, Type II:																		
(Rural)	100	100	100	100	100	99	99	98	97	95	93	90	86	82	76	69	62	54
(Urban)	61	54	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Open-Graded, Friction Course, Type 1:																		
Green River Gravel	100	100	100	100	100	100	100	100	100	100	100	99	99	99	98	97	95	93
Slag	100	100	100	100	100	100	99	98	97	95	93	90	86	81	75	68	61	52
Gravel	99	99	98	98	97	97	96	95	93	91	89	87	84	81	78	74	70	66
Granite	100	100	100	100	100	100	100	100	100	100	100	100	100	99	99	99	98	97

REFERENCES

1. Rizenbergs, R. L.; Burchett, J. L.; and Napier, C. T.; "Skid Resistance of Pavements," Research Report 331, Division of Research, Kentucky Department of Highways, July 1972. Also in Skid Resistance of Highway Pavements, ASTM STP 530, American Society for Testing and Materials, 1973.
2. Burchett, J. L.; "Seasonal Variations in the Skid Resistance of Pavements in Kentucky," Research Report 499, Division of Research, Kentucky Bureau of Highways, July 1978.
3. Rizenbergs, R. L.; Burchett, J. L.; Deacon, J. A.; and Napier, C. T.; "Accidents on Rural Interstate and Parkway Roads and Their Relation to Pavement Friction," Record 584, Transportation Research Board, 1976.
4. Rizenbergs, R. L.; Burchett, J. L.; and Warren, L. A.; "Accidents on Rural, Two-Lane Roads and Their Relation to Pavement Friction," Record 633, Transportation Research Board, 1977.
5. "Skid Resistance of Paved Surfaces Using a Full-Scale, Tire," E 274-77, Annual ASTM Standards, Part 15, 1977.
6. "Standard Tire for Pavement Skid Resistance Tests," E 501-76, Annual ASTM Standards, Part 15, 1977.
7. Rizenbergs, R. L.; Burchett, J. L.; and Napier, C. T.; "Skid Test Trailer: Description, Evaluation and Adaptation," Research Report 338, Division of Research, Kentucky Department of Highways, September 1972.
8. Rizenbergs, R. L.; Burchett, J. L.; Warren, L. A.; and Sampson, W. M.; "Statewide Survey of Skid Resistance of Pavements," Research Report 461, Division of Research, Kentucky Bureau of Highways, December 1976.
9. Local Climatological Data, Environmental Data Service, National Oceanic and Atmospheric Administration, United States Department of Commerce, Asheville, North Carolina.
10. Pigman, J. G.; and Mayes, J. G.; "Characteristics of Traffic Streams on Rural, Multilane Highways," Research Report 444, Division of Research, Kentucky Bureau of Highways, April 1976.
11. Rizenbergs, R. L. and Burchett, J. L.; "Statewide Survey of Skid Resistance of Pavements (1978)," Research Report 528, Division of Research, Kentucky Bureau of Highways, July 1979.
12. Zegeer, C. V.; Agent, K. R.; and Rizenbergs, R. L.; "Use of Economic Analysis and Dynamic Programming in the Selection of Projects for Resurfacing," Research Report 516, Division of Research, Kentucky Bureau of Highways, February 1979.
13. Standard Specifications for Road and Bridge Construction, Edition of 1965, Kentucky Department of Highways, May 1965.
14. Supplemental Specification No.1 to the 1965 Standard Specifications for Road and Bridge Construction, Kentucky Department of Transportation, April 1974.
15. Standard Specifications for Road and Bridge Construction, Edition of 1976, Kentucky Department of Transportation, June 1976.
16. Standard Specifications for Road and Bridge Construction, Edition of 1979, Kentucky Department of Transportation, May 1979.

17. Florence, R. L.; "Kentucky Rock Asphalt Hot-Mix Surfaces," Research Report 258b, Division of Research, Kentucky Department of Highways, August 1968.
18. Florence, R. L.; and Southgate, H. F.; "Experimental Sand-Asphalt Surface," Research Report 299, Division of Research, Kentucky Department of Highways, October 1970.
19. Havens, J. H.; Burchett, J. L.; and Rizenbergs, R. L.; "Skid Resistance Studies in Kentucky (An Overview 1974)," Research Report 399, Division of Research, Kentucky Bureau of Highways, September 1974.
20. Rose, J. G.; and Havens, J. H.; "Aggregate Shape and Skid Resistance," Research Report 312, Division of Research, Kentucky Department of Highways, September 1971.
21. National Safety Council, "Estimating the Cost of Accidents," Bulletin T-113-79, August 1979.
22. Havens, J. H.; and Williams, E. G.; "A Study of the Properties and Performance of Kentucky (Natural Sandstone) Rock Asphalt," Research Report 112, Division of Research, Kentucky Department of Highways, February 1956.
23. Williams, E. G.; "A Test Road for Evaluation of Sandstone as an Aggregate in Plant-Mix Bituminous Pavements," Research Report 77, Division of Research, Kentucky Department of Highways, April 1952.
24. Florence, R. L.; "Class I Bituminous Mixtures," Research Report 239, Division of Research, Kentucky Department of Highways, September 1966.
25. Florence, R. L.; "Construction and Interim Performance of Silica Sand-Asphalt Surfacing," Research Report 222, Division of Research, Kentucky Department of Highways, February 1965.

APPENDIX A

HISTORY AND DESCRIPTION OF PAVEMENT TYPES

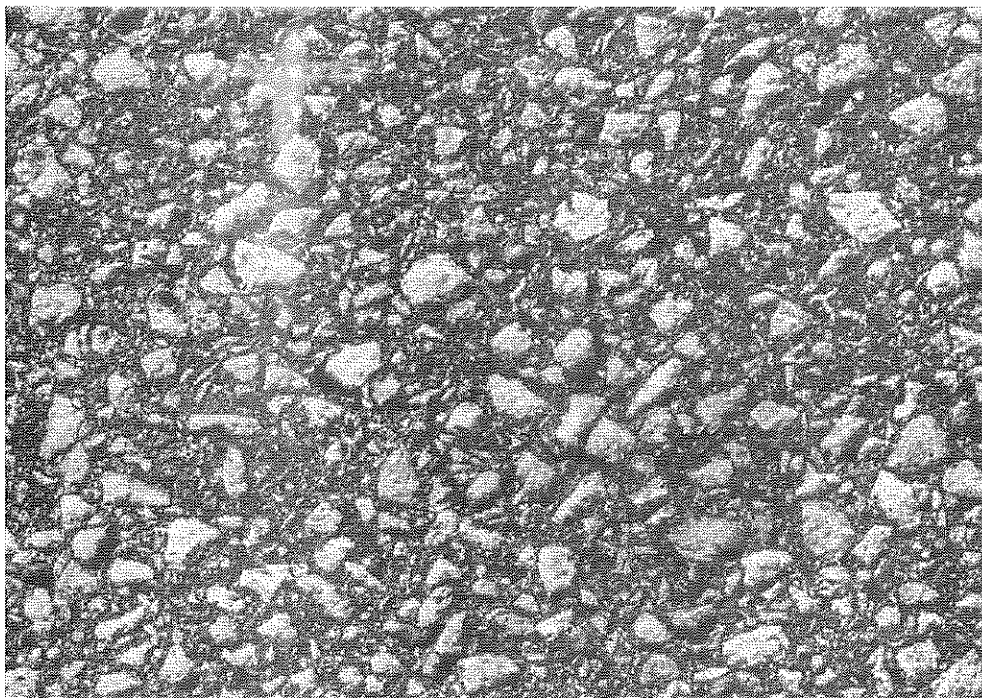


Figure A-1. Worn Class I, Type A, Bituminous Surface.



Figure A-2. New Class I, Type A (Modified), Bituminous Surface.

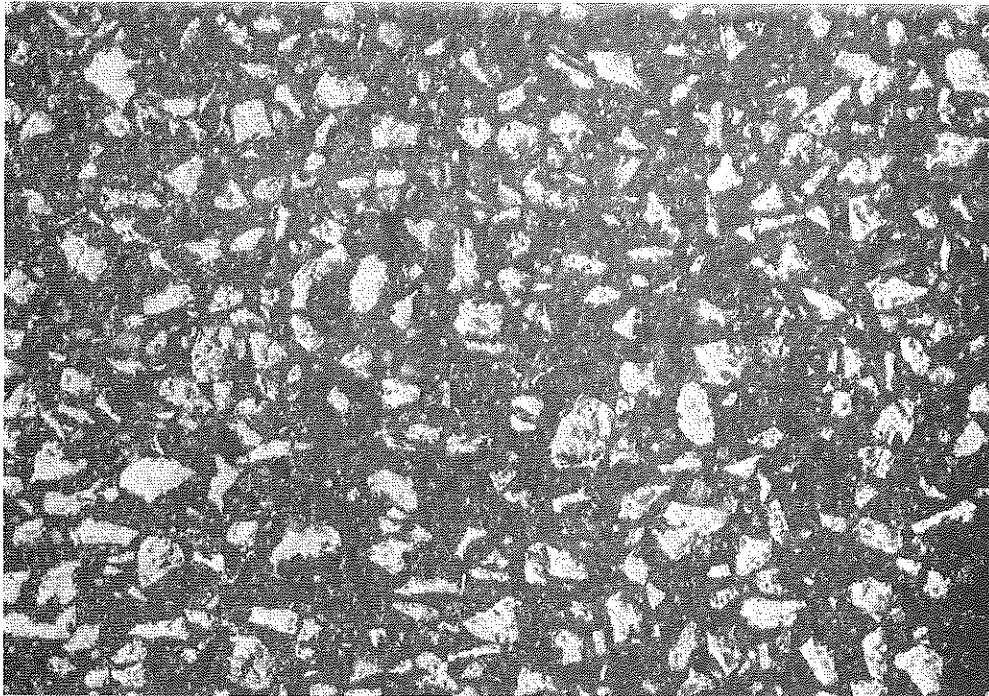


Figure A-3. Worn Class I, Type A (Modified), Bituminous Surface.



Figure A-4. New Class AA Bituminous Surface on KY 55 in Spencer County.

KENTUCKY DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
SPECIAL PROVISION NO. 33 (79)

BITUMINOUS CONCRETE SURFACE, CLASS AA
(SKID-RESISTANT)

This Special Provision shall apply when indicated on the plans or in the proposal. Section references herein are to the Bureau's 1979 Standard Specifications for Road and Bridge Construction.

I. DESCRIPTION

This work shall consist of the construction of one course of hot-mixed, hot-laid, Bituminous Concrete Surface, Class AA mixture upon a satisfactory foundation of either new or existing pavement. The thickness of the course shall be approximately 3/4 inch and the mixture shall be placed at the approximate rate of 80 pounds per square yard. All leveling, wedging and patching deemed necessary by the Engineer to repair an existing pavement so it will provide a smooth, uniform and satisfactory foundation shall be performed before construction of this surface course is started.

This paving mixture is intended to provide textured, skid-resistant, wearing surfaces for vehicular traffic. Special attention shall be given to all aspects of the work to ensure that only high quality materials, equipment, and workmanship are utilized at all times and that the finished surface is in conformity with the lines, grades, and sections indicated on the plans or in the proposal.

II. MATERIALS

All materials for use in this work shall be sampled, tested, and approved prior to starting the production of the mixture.

The bituminous material for the tack coat shall conform to the requirements in the contract.

The asphalt cement for the mixture shall conform to the requirements in the contract.

The parent materials for the aggregate may consist of natural quartz, pebbles, siliceous gravels, granite, and/or processed slags, or combinations thereof. In addition to the requirements herein, the aggregate shall meet the applicable requirements of Sections 804.04.02 and 805.03, except slag or sandstone shall show a maximum wear of 50 percent. Unless otherwise provided, crushed limestone will not be permitted as any part of the aggregate except mineral filler.

The aggregate shall be a 100 percent crushed product with at least 95 percent having one or more crushed faces and at least 75 percent having two or more crushed faces when tested by KM 64-603.

The aggregate, excepting slags, shall have a minimum insoluble content of 75 percent as determined by KM 64-223 or 64-224, as applicable.

The maximum quantity of mineral filler which may be incorporated into the mixture in order for the aggregate to conform to gradation is 5 percent.

When tested by KM 64-619, the blend, including mineral filler, shall have a Sand Equivalent value of no less than 45.

The angularity of the aggregate particles shall be such that the sand (portion passing the No. 4 sieve) will have 53 percent or more voids when subjected to the Dry-Bulking Test in accordance with KM 64-609.

Mineral filler, if used, shall conform to the requirements of subsection 804.04.02.01 (B); fly ash shall not be used.

Silicone shall be of a type and source approved by the Engineer and shall be furnished by the Contractor and used as directed by the Engineer.

A heat-stable, anti-stripping additive of a type and source approved by the Engineer shall be furnished by the Contractor and used as directed by the Engineer.

III. CONSTRUCTION METHODS

A. General. Every requirement contained in Sections 401.01 and 401.06 through 401.22 which is applicable to this type of work shall be in force except as provided herein and on the plans and in the proposal.

B. Weather Limitations. No Bituminous Concrete Surface Class AA shall be placed unless the ambient air temperature, and the temperature of the existing surface, is at least 50 degrees F.

C. Tack Coat. Tack coat shall be furnished and applied as specified in Section 407.

D. Preparation of the Mixture. The job-mix formula shall be established as specified in Section 401.02.

Marshall Design Method criteria are as follows:

Minimum Stability (lb)	Air Voids (%)
1800	3-7

The proportions and grading shall be maintained within the job-mix formula tolerances as specified in Section 401.02.

The gradation of the mixture by dry sieving shall be as follows:

Sieve Size	Percent Passing
1/2"	100
3/8"	80-100
No. 4	55-85
No. 8	35-60
No. 16	25-45
No. 50	9-21
No. 100	5-14
No. 200	3-7

KM 64-411 and KM 64-421 shall be used to establish the job-mix formula.

If the aggregate for the mixture is a blend of two or more materials, the materials shall be metered from individual cold bins in the proportions approved by the Engineer.

E. Cooling. Vehicular traffic shall not be permitted to use the compacted mixture until it has cooled sufficiently to withstand the traffic without any damage. Intersections and any other areas which must be re-opened to traffic soon after the mixture has been compacted shall be thoroughly sprayed with water so as to hasten the cooling of the compacted mixture to atmospheric temperature before it is subjected to traffic. Any adjacent areas to receive the course which are wetted by the water shall be allowed to thoroughly dry before the additional course is laid.

IV. METHOD OF MEASUREMENT

The Class AA mixture will be measured in accordance with Section 402.04.

No separate measurement will be made for silicone or anti-stripping additives, as these are considered incidental

Figure A-5. Special Provision 33(79); Bituminous Concrete Surface, Class AA (Skid-Resistant).

to other contract items.

Bituminous material for tack will be measured in accordance with Section 407.08.

V. BASIS OF PAYMENT

The accepted quantities of mixture and bituminous material for tack coat will be paid for in accordance with Sections 402.05 and 407.09, respectively. Silicone, and/or anti-stripping additive for the mixture and the water for cooling the pavement will be considered as incidentals and will not be paid for separately.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Bituminous Concrete Surface, Class AA	Ton
Bituminous Material for Tack	Ton

Figure A-5 (Cont.)

APPROVED July 26, 1979

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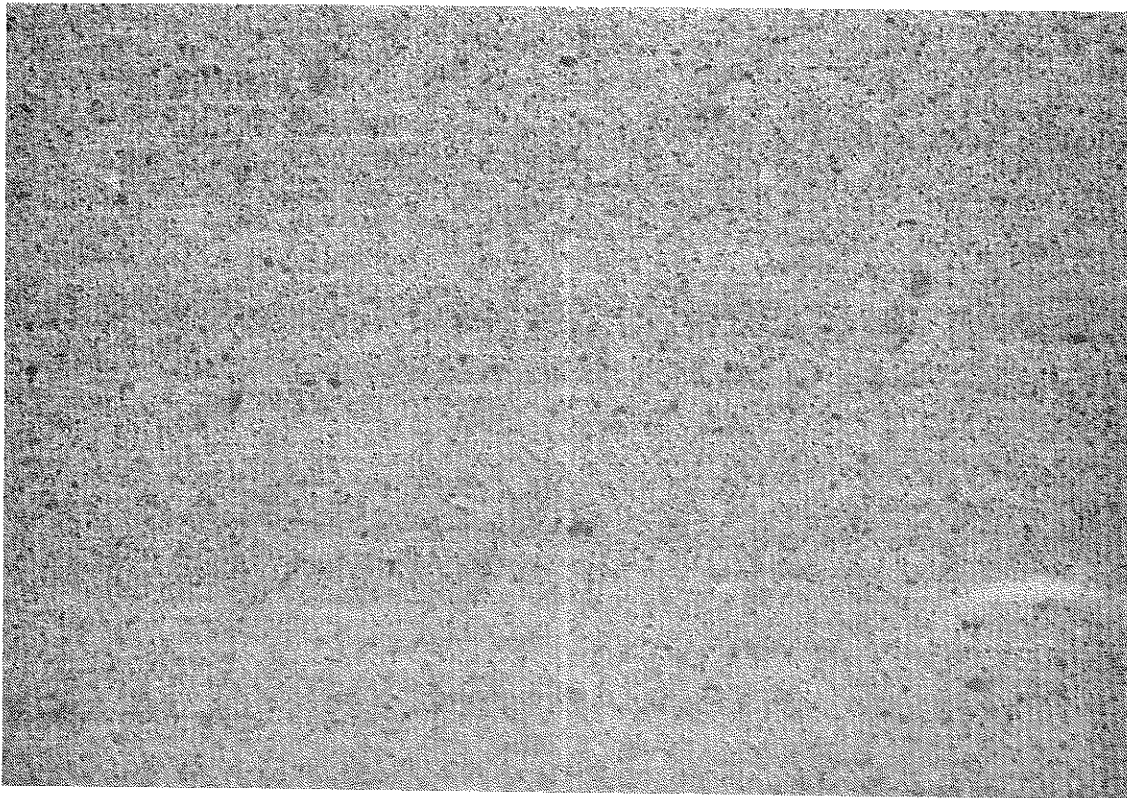


Figure A-6. New Portland Cement Concrete Surface (Burlap Drag Texturing);
I24-3(17)85, Christian County.

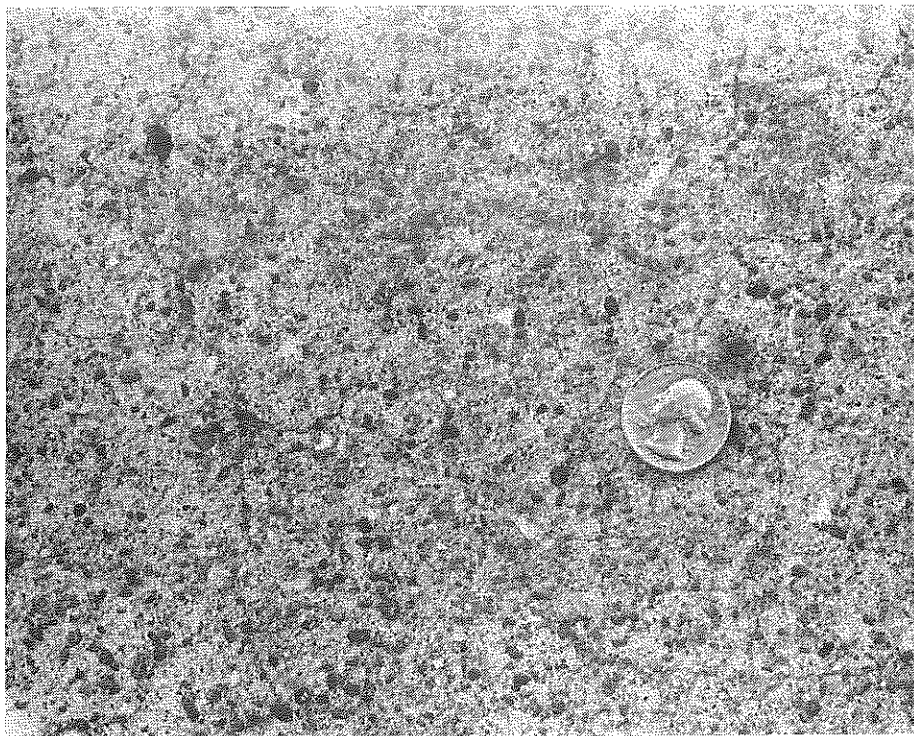


Figure A-7. Worn Portland Cement Concrete Surface; Western Kentucky Parkway (WK 25-2), Ohio County.

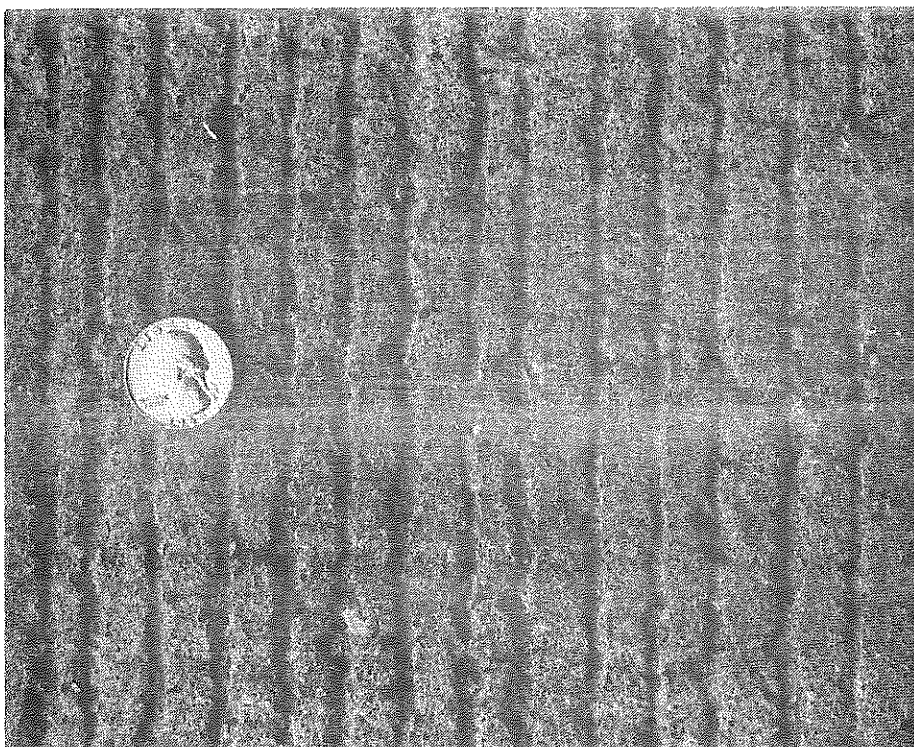


Figure A-8. Grooved Portland Cement Concrete Surface; I24-3(19)76, Christian County.

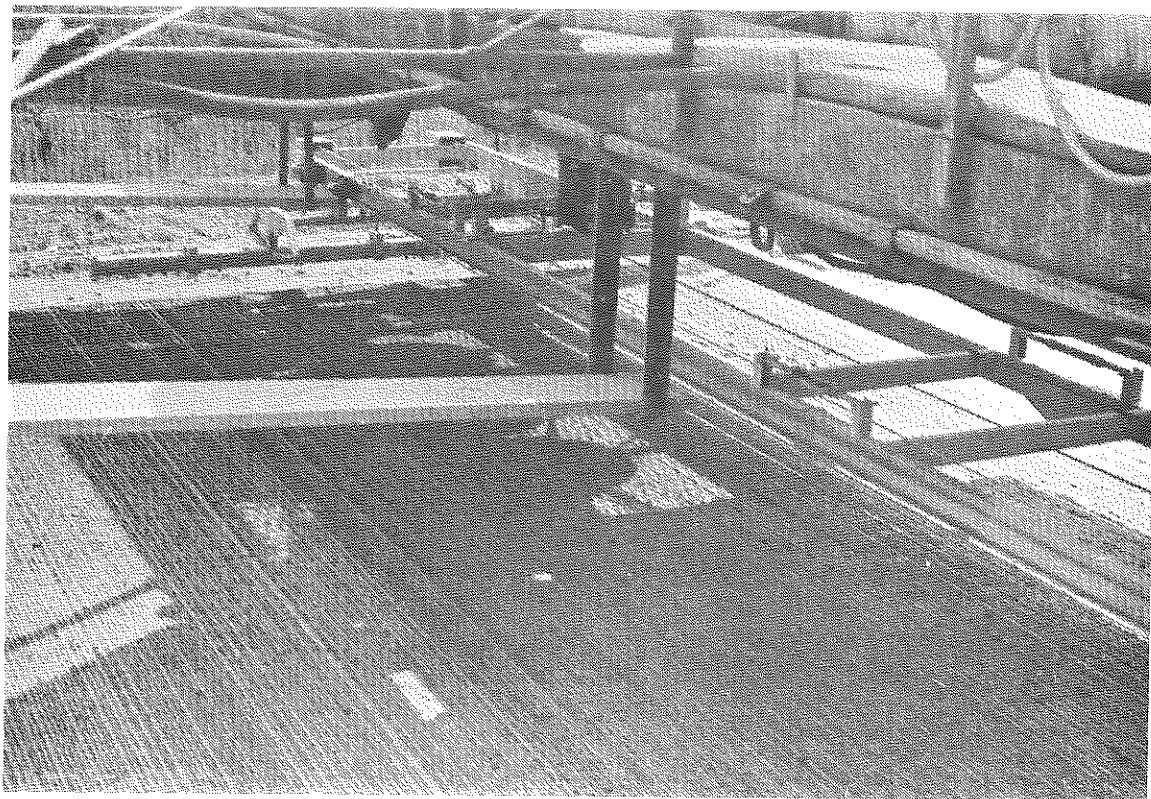


Figure A-9. Equipment Used to Groove Portland Cement Concrete; I24-3(19)76 and I24-3(18)65 (photo taken on I24-3(18)65).



Figure A-10. Worn Kentucky Rock Asphalt (Paved in 1966); US 79, Todd County.



Figure A-11. Worn Sand-Asphalt Surface (Special Provision 59B).



Figure A-12. New Open-Graded Friction Course, Crushed (Green River) Gravel; KY 55, Spencer County.

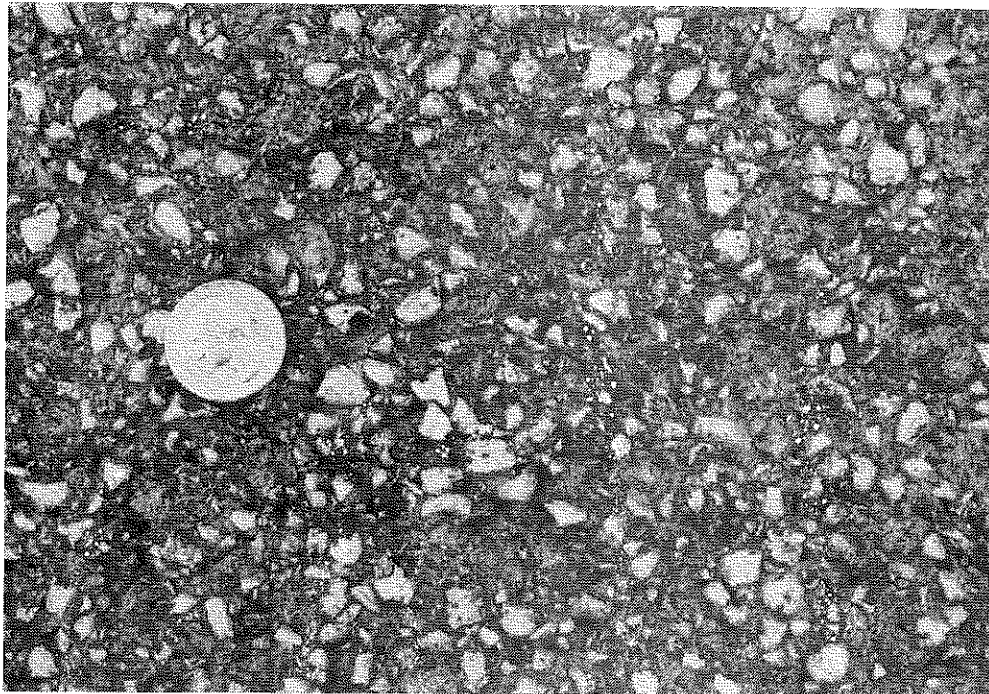


Figure A-13. Worn Open-Graded Friction Course, Crushed (Green River) Gravel; US 62, Grayson County.



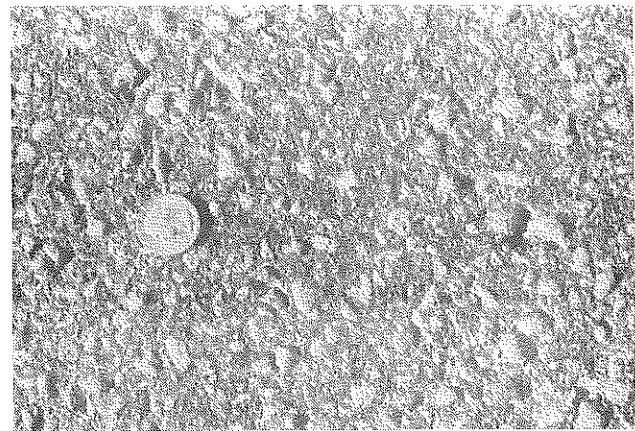
a) Granite



b) Quartz



c) Slag



d) Quartzite

Figure A-14. Sprinkle Treatments for Bituminous Surfaces; US 31E, Nelson County.

KENTUCKY DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
SPECIAL PROVISION NO. 36B (79)

BITUMINOUS PAVEMENT MILLING AND TEXTURING

This Special Provision shall apply when indicated on the plans or in the proposal. Section references herein are to the Bureau's 1979 Standard Specifications for Road and Bridge Construction.

I. DESCRIPTION

This work shall consist of improving the profile, cross section, and surface texture of an existing bituminous pavement, and shall include all labor, materials, equipment, and incidentals necessary to complete the work, including disposal of all resultant cuttings.

II. CONSTRUCTION REQUIREMENTS

A. Equipment.

The equipment for milling and texturing the pavement shall be a power-operated, self-propelled planing machine or grinder capable of removing bituminous concrete to the required depth, profile, cross slope, and surface texture. The machine shall be capable of accurately establishing profile grades by referencing from either the existing pavement or from an independent grade control, and shall have positive means for controlling cross slope. The machine shall have a floating moldboard with sufficient down pressure to plane the milled surface. The machine shall have an effective means of removing cuttings from the pavement and for preventing dust from escaping into the air.

The textured pavement shall be thoroughly swept immediately behind the machine and all materials swept up shall be loaded and hauled away. A water truck shall be furnished and used to control dust from the work, when deemed necessary by the Engineer.

Supplemental equipment shall be provided as necessary to remove material adjacent to curbs, railroad crossings, and other areas that cannot be removed by the milling machine.

During non-working hours of each day, all equipment and signing devices required during the working hours shall be placed behind the ditch line at locations approved by the Engineer, or off the right-of-way. Personal vehicles will not be permitted to park within the right-of-way except in specific areas designated by the Engineer.

B. Milling and Texturing.

1. *General.* After milling and texturing, the finished surface shall provide a smooth riding surface free from gouges, ridges, oil film, and other imperfections of workmanship, having a uniform texture, and true to the required grade and cross section. The elevation of the longitudinal edges of adjacent cuts shall not differ more than 1/8-inch. When practicable, vertical longitudinal faces shall not be left during non-working hours in areas exposed to public traffic. When it is necessary to expose public traffic to vertical longitudinal faces, the faces shall be no more than 1 1/4 inches in height and shall be tapered in a manner approved by the Engineer, to avoid creating a hazard for traffic.

Where sound pavement has been gouged, torn, or otherwise damaged during the milling operations, or damage is done to any other property of any kind including utility frames, grates, and covers, repairs shall be made by the Contractor at no cost to the Bureau.

When cuts greater than 1 inch are specified in the contract, pavement cores will be available for inspection at the Bureau of Highways' District Office having jurisdiction over the project.

2. *Cut 1 inch.* Where a 1-inch or bottom of rut cut is required, only the amount of cut necessary to acceptably texture the bottom of the rut will be required. Where there are no ruts only the amount necessary to obtain an acceptable texture shall be removed.

3. *Cut more than 1 inch.* Where a cut deeper than 1 inch is required, the material shall be removed in successive cuts of approximately 1 inch each, measured at the edge of the cutting drum. Each 1-inch cut shall be completed over the entire length and width of the area; the next 1-inch cut shall not be started until the area has been examined by the Engineer and the Engineer determines that additional cutting is necessary or desirable.

When it is not necessary to maintain public traffic, the Engineer may permit cuts deeper than 1 inch, provided that a final cut not exceeding 1 inch is made, and provided that satisfactory results are obtained.

The depth of cut indicated in the contract is approximate only. The actual depth of cut will be determined by the Engineer on the project.

4. *Texture.* The texture shall be uniform throughout the project and shall provide, in the judgement of the Engineer, a satisfactory riding surface. The average texture depth shall be no less than 0.20 inch.

5. *Surface Tolerance.* The finished surface after the final cut shall not show a deviation greater than 1/8 inch from a 10-foot straightedge, and the cross slope shall not deviate more than 3/8 inch in 10 feet. All irregularities exceeding these limits shall be corrected.

6. *Approaches and Tapers.* Approaches and tapers shall be acceptably textured when required by the Engineer. Length, width, and depth of cut on approaches and tapers will be determined by the Engineer. The approaches and tapers shall match the finished cut on the main line and shall be transitioned to the existing surface to within $\pm 1/8$ inch.

When deemed necessary by the Engineer, private entrances shall be transitioned to provide a smooth approach to the roadway.

7. *Pavement Marking.* Pavement marking shall be furnished and applied in accordance with Section 401.21.

8. *Hauling.* Unless otherwise specified the cuttings shall be delivered to the Bureau of Highways' Maintenance Lot nearest the project. The Bureau will be responsible for stockpiling the material at the lot.

In the event that the Engineer directs that the cuttings be hauled to a site different from the nearest maintenance lot or other location specified in the contract, and the average haul distance to the site designated by the Engineer differs by 5 miles or more from the average contract haul distance, both as measured by the Engineer, then the contract unit price for Bituminous Pavement Milling and Texturing shall be adjusted. The adjustment shall be calculated as the product of the increase or decrease in average haul distance and the agreed price adjustment factor of \$0.14 per mile per ton.

C. *Adjusting Small Drainage Structures.* Small drainage structures such as catch basins, etc. shall be adjusted as required to match the finished pavement, or to provide proper drainage, in accordance with Section 710.05. When existing catch basin grates are below the finished grade, no adjustment will be required.

Manholes will generally be adjusted by others, and shall be adjusted by the Contractor only when directed by the Engineer. When the Engineer directs that manholes be adjusted, construction methods, measurement and payment will be as specified in Section 710. Manhole adjusting rings that are removed and not reused are the property of the Bureau and shall be delivered to the nearest Bureau of Highways' Maintenance Lot.

The Contractor shall keep all small drainage structures,

Figure A-15. Special Provision 36B(79); Milling and Texturing.

utility valves, etc. free of cuttings and other debris during the milling operation.

III. METHOD OF MEASUREMENT

A. Bituminous Pavement Milling and Texturing. The material removed from areas acceptably milled and textured will be measured in tons.

When the original contract quantity is 2,000 tons or more the material shall be weighed as specified in Section 109, except that commercial or portable scales, certified by the Division of Weights and Measures and approved by the Engineer, will be acceptable.

When the original contract quantity is less than 2,000 tons the Contractor shall arrange for 3 trucks of each size to be weighed to determine the average net weight per load; the total quantity will be calculated using the average weight per load and the load count for each size truck. The Engineer may direct that additional weighing be performed if excessive variation in loading is apparent.

When the Engineer requires additional milling to correct deficiencies in the finished grade, cross section, or texture, no measurement or payment will be made for the additional material removed, when the deficiencies are due to unsatisfactory workmanship by the Contractor.

Water used to control dust will not be measured for separate payment but will be considered incidental to the milling and texturing.

B. Hauling Cuttings. Hauling cuttings will not normally be measured for separate payment. However, if the contract includes a separate bid item for Hauling Cuttings, the quantity shall be the same as the quantity determined as specified in paragraph A for Bituminous Pavement Milling and Texturing.

C. Adjusting Small Drainage Structures. Adjusting Small Drainage Structures will be measured as specified in Section 710.06.

IV. BASIS OF PAYMENT

A. Bituminous Pavement Milling and Texturing. The accepted quantity of Bituminous Pavement Milling and Texturing will be paid for at the contract unit price per ton, which payment shall be full compensation for all labor, materials, equipment, and incidentals necessary to mill and texture the pavement, and control dust. When the contract does not include a separate bid item for Hauling Cuttings, then payment for Bituminous Pavement Milling and Texturing shall also include full compensation for all hauling necessary to deliver the cuttings, except the adjustment specified in paragraph II.B.8.

B. Hauling Cuttings. If the contract includes a separate pay item for Hauling Cuttings, payment for the accepted quantity at the contract unit price per ton shall be full compensation for all labor, equipment, hauling, and incidentals necessary to deliver the cuttings, except the adjustment covered in paragraph II.B.8. When the contract does not include a separate pay item for Hauling Cuttings, this work will be considered incidental to Bituminous Pavement Milling and Texturing.

C. Adjusting Small Drainage Structures. Adjusting Small Drainage Structures will be paid for as specified in Section 710.07.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Bituminous Pavement Milling and Texturing	Ton
Adjusting Small Drainage Structures	See Section 710.07
Hauling Cuttings (when listed as a separate bid item)	Ton

APPROVED

July 24/1974

G. F. Kemper
G. F. KEMPER, P. E.
STATE HIGHWAY ENGINEER

Figure A-15. (Cont.)

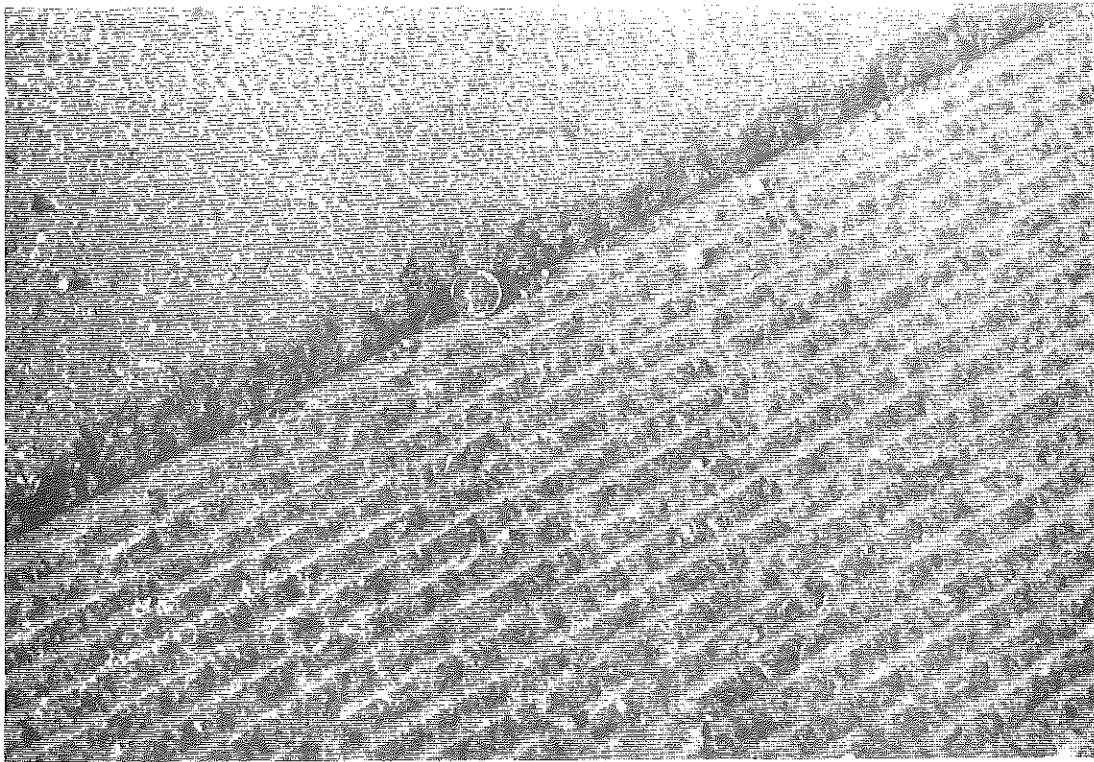


Figure A-16. Texture of Milled Bituminous Surface; KY 80, Pulaski County.

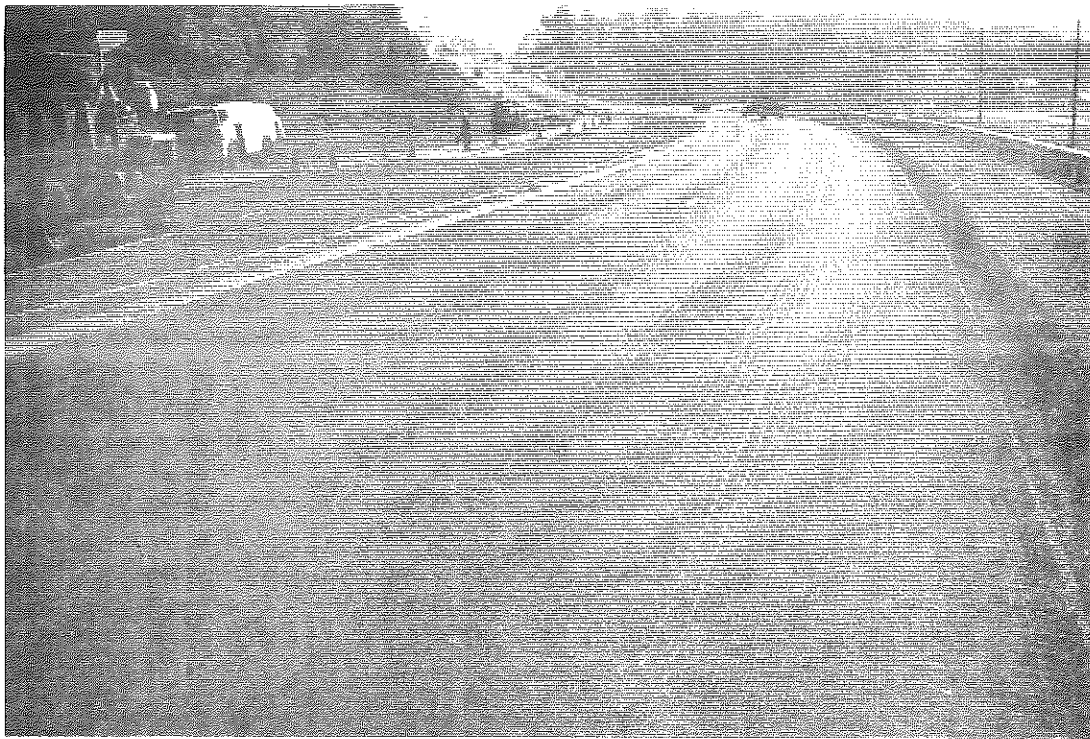


Figure A-17. View of Milled Bituminous Surface; KY 80, Pulaski County.

GENERAL REQUIREMENTS FOR AGGREGATES

FINE AGGREGATES

Fine aggregate include the following (from references 13, 15, and 16):

1. Natural Sand - Fine granular material resulting from the natural disintegration of rock.
2. Crushed Sand - Fine granular material resulting from crushing of stone, gravel, or slag.
3. Conglomerate Sand - Natural materials which have been processed to the desired sizes without crushing. However, conglomerate sand may include some material which has been produced by crushing larger pieces of the natural materials.
4. Mortar Sand - Natural, crushed, or conglomerate sand suitable for use in portland cement mortar.
5. Mineral Filler - Limestone dust, portland cement, fly ash, or other inert mineral matter.

COARSE AGGREGATES

Coarse aggregates (from references 15 and 16) include crushed stone or slag, crushed or uncrushed gravel, and lightweight aggregate when permitted. Unless otherwise provided, 65 percent or more of crushed gravel retained on a No.-4 sieve shall have one or more crushed faces. Unless required otherwise, coarse aggregates of all types, sizes, and uses shall meet the following:

Wear (except slag)	40% (maximum)
Wear (slag only)	50% (maximum)
Soundness (5 cycles)	12% loss (maximum)
Friable Particles	1.0% (maximum)
Shale	2.0% (maximum)
Unit Weight (slag)	70 pcf (minimum)

SAMPLING AND TESTING

The methods of sampling and testing will be as follows:

Sampling	KM 64-601
Dry Sieve Analysis	KM 64-602
Percent Crushed Particles	KM 64-603
Shale	KM 64-604
Dry Bulking	KM 64-609
Soundness (5 cycles)	KM 64-610
Friable Particles	KM 64-611
Chert	KM 64-612
Unit Weight	KM 64-613
Wear	KM 64-614
Coal and Lignite	KM 64-615
Sand Equivalent	KM 64-619
Insoluble Content	
(Coarse Aggregate)	KM 64-223
(Fine Aggregate)	KM 64-224
Organic Impurities	AASHTO T 21
Mortar Strength	ASSHTO T 71

BITUMINOUS CONCRETE PAVEMENT

CLASS I

Skid tests in 1953 showed that Class I, Type B surfaces containing all-limestone aggregate to be very slippery (22). Kentucky rock asphalt and sandstone were outstanding. Class I, Type B, containing natural sand, was superior to all limestone surfaces. The decisive action was to require natural sand in Type B surfaces if the traffic exceeded 700 vehicles per day. There was some hope then that rock asphalt and sandstone aggregate would develop and supply skid-resistant surfacing superior to Type B. Sandstone was specified as an alternate to limestone for several years in eastern Kentucky; a few sandstone resurfacing projects materialized (23); but the alternative was dropped about 1963 because contractors were not bidding it.

At the beginning of interstate surfacing (Clark-Montgomery Counties), difficulties arose with the Class I, Type B surface. The Class I, Type B surface admitted either limestone or natural sands. Natural sands (dredges) were usually void of fines, and the addition of fines (filler) was normally not required. These Type B surfaces containing 8-10 percent voids tended to ravel. The gradation was changed to allow addition of limestone sands to supply the needed fines. This Type B (Modified) surface was used from 1961 to 1963. During this period, the Division of Research undertook studies to improve the mixture. This work resulted in Class I, Type A (Figure A-1) (13, 24). This was a very dense, very stable bituminous concrete and was used until 1969 when, after field evaluations of many projects, it was concluded that the mixture was perhaps too dense. Class I, Type A (Modified) resulted (Figures A-2 and A-3) (14). This designation was used until superseded in 1976 with the issuance of the 1976 edition of Standard Specifications... (15). Bituminous concrete surface, specified therein (Sections 401 and 402), included provisions for Type A (same gradation as previous Class I, Type A) and Type B (same gradation as previous Class I, Type A (Modified)). The 1979 edition of Standard Specifications... (16) specified composition limits for only one surface type. The various composition limits are presented in Table A-1.

CLASS AA (SKID RESISTANT)

This surface was first used in 1979. A photograph of the pavement surface on KY 55 in Spencer County is shown in Figure A-4. Special Provision 33, dated April 19, 1978, to the 1976 Standard Specifications... (15) and continued (dated July 26, 1979) (see Figure A-5) for the 1979 Standard Specifications... (16), described the requirements for bituminous concrete surface, Class AA (skid-resistant).

PORTLAND CEMENT CONCRETE PAVEMENT

The 1965 and subsequent editions of the Standard Specifications... (13, 15, 16) required burlap drag texturing of concrete pavement (Figures A-6 and A-7). In 1974, burlap drag was omitted on some projects and the surface was textured by transverse grooves. Special notes for transverse grooving of plastic cement concrete pavement stated the following:

The final finish for the cement concrete pavement shall be a transverse-grooved finish which is accomplished by mechanized

equipment using either a vibrating beam roller or a comb made with steel tines, or other approved device. The grooves shall be formed in the plastic concrete at an appropriate time during the stiffening of the concrete, so that in the hardened concrete, the grooves will be between 0.09 to 0.13 inch in width, between 0.12 to 0.19 inch in depth, and be spaced at intervals between 0.5 and 1.0 inch. The grooves shall be relatively smooth and uniform in all aspects, and shall be formed without tearing the surface and without bringing pieces of the coarse aggregate to the top of the surface.

The transverse grooves shall be formed within the above specified size limits so that a minimum average texture depth of 0.030 inch is provided when determined by the Bureau's current Sand Patch Method. Any area of pavement which exhibits a value of less than 0.025 inch shall be check tested as necessary to determine the extent of the area. If check tests confirm that the size of the area with the low reading is 200 square yards or larger, the area will be considered deficient and require corrective work as hereinafter specified.

Manual tools such as fluted floats or rakes with spring steel tines may be used for forming the transverse grooves in areas such as ramps, connections, and other miscellaneous sites where the mechanized grooving equipment cannot be utilized. Careful attention shall be given to the manual workmanship in order to achieve grooves which conform to the same requirements as those specified for the grooves formed by the mechanized equipment.

Areas of the hardened, grooved pavement which do not conform to these requirements, either because of a deficiency in the grooving or because of a rough or open texture of the surface, shall be corrected by the cutting of acceptable grooves in the hardened pavement with an approved mechanical grinder or cutting machine.

The 1976 edition required burlap drag for all projects and specified texturing by formation of transverse grooves (after burlap drag) when so required by the plans (Figures A-8 and A-9). The 1979 edition required transverse groove texturing (after burlap drag) unless specified otherwise on the plans. The grooves were specified to be between 0.09 inch (2.29 mm) and 0.13 inch (3.30 mm) in width, between 0.12 inch (3.05 mm) and 0.19 inch (4.83 mm) in depth, and spaced at random intervals between 0.3 inch (7.6 mm) and 1.0 inch (25.4 mm).

The following specifications are paraphrased from the Standard Specifications (15, 16) for portland cement concrete:

Portland Cement

Portland cement shall conform to the requirements for Type I of the Standard Specifications for Portland Cement, ASTM Designation: C 150.

Admixtures

Requirements are given in Section 802 of reference 16 for the following admixtures:

- A. Air-Entraining
- B. Water-Reducing and Retarding
- C. Water-Reducing
- D. Water-Reducing and Accelerating

Fine Aggregates

Fine aggregates may be natural, crushed, or conglomerate sand or combinations thereof; except crushed limestone or other polish susceptible aggregates will not be permitted in concrete intended as a wearing surface for vehicular traffic. The requirements for fine aggregate are as follows:

A. Sand Equivalent*	80 (minimum)
Soundness (5 cycles)	12% loss (maximum)
Friable Particles	1.0% (maximum)
Coal and Lignite	0.25% (maximum)
Dry-Bulking	52% volume of voids (maximum)
Organic Impurities	Not darker than the standard
Mortar Strength**	95% at 7 calendar days (minimum)

B. Gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 inch	100
No. 4	90-100
No. 16	45-80
No. 50	5-25
No. 100	0-8

* Crushed sand may be accepted with a minimum sand equivalent of 70 provided the passing No.-40 sieve fraction of the sand is non-plastic.

** Testing for mortar strength will be required only for sand which does not pass the test for organic impurities and will supersede the requirement of organic impurities.

Coarse Aggregate

A.

	<u>Maximum Percent by Weight</u>
Friable Particles	0.25
Finer than No. 200	2.0
Coal and Lignite	0.5
Chert (Sp. Gr. less than 2.35)	
Limestone Aggregate	0.25
Gravel Aggregate	1.5

B. Gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 1/2 inch	100
1 inch	95-100
1/2 inch	25-60
No. 4	0-10
No. 8	0-5

KENTUCKY ROCK-ASPHALT SURFACE

From the early 1900's until the 1950's, Kentucky rock asphalt was used extensively in Kentucky and was regarded as a premium-type surfacing material. However, it became unreliable in other qualities and, after an adverse report on a test road constructed in 1955 (22), the company liquidated its assets in 1958. Sometime later, they were acquired by another company and two thrusts were made to develop serviceable materials, one in 1963 and another in 1966 (17). Special Provisions 24 and 24A governed resurfacing projects of 1966 (Figure A-10) and 1967 (17).

A final section of rock asphalt was placed in 1968 on US 27 near Somerset. A report, entitled "Experimental Sand-Asphalt Surface" (18), documents that effort.

SAND-ASPHALT SURFACE

Between 1964 and 1970, sand-asphalt surfaces were constructed under Special Provisions 22 and 22A. A discussion and description of these surfaces were given in a February 1965 report (25) and a later report in October 1970 (18). Chemical composition and shape of the sands used varied considerably amongst those projects. Many surfaces did not exhibit the desired level of friction for the volume of traffic sustained (1). Consequently, after a few more projects were constructed in 1972 under Special Provision 22B, this style of sand asphalt was discontinued.

In 1968, four sections of sand asphalt and one section of rock asphalt were laid (experimentally) on US 27 near Somerset (18). This was intended to demonstrate a higher skid resistance for 100-percent quartz sands than is obtainable with a blend of 50-percent quartz and 50-percent limestone sand. It was also intended to demonstrate differences in skid resistance between dense and porous sand asphalts. These sections were: Sand-Asphalt Surface (Special Provision 22A); Sand-Asphalt, Open-Graded High-Silica Surface (Special Provision 58); Kentucky Rock Asphalt Surface (Special Provision 24B); and Simulated Kentucky Rock Asphalt Surface (Special Provision 60).

Measurements made about five years after construction (December 1973) ranked the pavements in the order anticipated (19). However, the frictional levels achieved were disappointing. Limestone sand obviously reduced the skid resistance of sand asphalts. Continued study of the skid-resistant attributes of sands had indicated that the term "Natural Sand" and its definition given in Section 611 of the 1965 edition of the Standard Specifications (13) permitted but did not assure skid-resistant materials. It was concluded that sands should be selected in terms of mineral composition, gradation, and particle shape (20). Sand-asphalt (Skid Resistant), Special Provision 59B, resulted. Two projects materialized during 1972 and 1973 (on US 31W from West Point to US 60 south of Muldraugh) using crushed quartz gravel (Figure A-11).

With continued refinement of mineral composition and gradation, the mixtures evolved into Sand-Asphalt Surface, Type I (Special Provision 22E) and Sand-Asphalt Surface (Skid Resistant), Type II (Special Provision 59E). The special provision designations were superseded by the 1976 edition, and continued in the 1979 edition, of the Standard Specifications... (15, 16), Section 404, Sand-Asphalt Surface, Types I and II. The following

specifications are paraphrased from the Standard Specifications...:

Description

A. Type I. Sand-asphalt surface, Type I, is intended to provide a thin, fine-textured wearing surface produced from aggregates generally available from commercial sources.

B. Type II. Sand-asphalt surface, Type II is intended to provide a fine-textured, skid-resistant wearing surface.

Materials

A. Bituminous Materials. All bituminous materials shall be the type and grade specified in the contract and shall meet the applicable requirements of Section 806.

B. Admixture. Silicone shall be an approved type from an approved source, and shall be furnished and used as directed.

C. Aggregates. Fine aggregate may consist of natural, crushed, or conglomerate sand (lightweight aggregate is allowed by Special Provision 25) or combinations thereof with the addition of filler as necessary to meet gradation requirements. Sands shall have no more than 40% wear (except slag allowed to 50% maximum) and have no more than 1.0% friable particles. Mineral filler shall consist of limestone dust, portland cement, fly ash, or other inert mineral matter having similar characteristics and shall be graded such that 100 percent will pass a No.-16 sieve and at least 30 percent will pass a No.-200 sieve.

The combined aggregate for Sand Asphalt, Type I, shall be composed of either a minimum of 50 percent crushed slag sand or a proportion of quartz sand (or lightweight aggregate) such that the minimum insoluble content shall be 50 percent, or an approved combination thereof. The remaining portion of the aggregate may consist of either natural sand, limestone sand, slag sand, or combinations thereof, except that not more than 25 percent of the total aggregate by weight shall be limestone sand. The minimum sand equivalent of the combined aggregates shall be 45.

The sand for Sand Asphalt, Type II, shall be either crushed slag, crushed quartz (silica) gravel containing at least 75% insolubles, or crushed granite (or lightweight aggregate). The insoluble content will be determined on the portion of the sand coarser than the No. 100 seive. A maximum of 25 percent natural sand may be blended with the crushed sand providing the natural sand has an insoluble content of at least 75 percent and providing all other requirements are met. Except when used as mineral filler, crushed limestone will not be permitted. Combined aggregates shall have a minimum voids content of 50 percent when tested in accordance with KM 64-609.

Temperature Requirements

A. Aggregates. 265-350 deg F; 130-175 deg C

B. Asphalt Cement. 275-325 deg F; 135-165 deg C

C. Mixture

1) At Plant: 265-325 deg F; 130-165 deg C

2) Laying: 250-325 deg F; 120-165 deg C

Gradation of Mixtures

<u>Sieve Size</u>	<u>Percent Passing</u>	
	<u>Type I</u>	<u>Type II</u>
1/4 inch	100	100
No. 8	75-100	50-90
No. 16	60-90	25-65
No. 30	45-75	15-45
No. 50	15-45	05-30
No. 100	05-15	03-20
No. 200	02-06	02-06

The percent by weight of asphalt cement in the mix will be established between 6 to 10 percent except that an increased quantity may be required for absorptive aggregate. Tandem rollers weighing 5 to 8 tons shall be used for compaction. The thickness of the course shall be approximately 5/8 inch; and the sand-asphalt mixture, except when using lightweight aggregate, shall be placed at the approximate rate of 65 pounds per square yard. For lightweight aggregate, Type I shall be placed at 55 pounds per square yard and Type II shall be placed at 45 pounds per square yard.

The following specifications were taken from Special Provision 59D. A complete copy of this special provision was included in a September 1974 report (19):

Aggregates

The sand for the sand-asphalt mixture shall be either crushed slag sand or a select, angular, high silica material containing at least 75 percent silicon dioxide. The silicon dioxide determination will be made in accordance with Kentucky Method 64-244, and will be made on the portion of sand retained on all sieves down to and including the No. 100 sieve, exclusive of any mineral filler in that portion. The high silica sand shall preferably be the product of crushed siliceous material, but may be comprised either of natural materials or crushed materials, or a combination of both, provided that the gradation and angularity of the sand are consistently uniform and conform to the specified requirements.

Gradation

<u>Sieve Size</u>	<u>Percent Passing</u>
1/4 inch	100
No. 8	60-90
No. 16	35-65
No. 30	20-45
No. 50	10-30
No. 100	03-20
No. 200	02-06

OPEN-GRADED FRICTION COURSES

Open-graded friction courses were first used in Kentucky in 1973; the mixture using slag aggregate was placed on a short section of US 23 south of Ashland. Another longer section using crushed quartz gravel aggregate was placed as a demonstration project on the southbound lanes of US 31W just north of Elizabethtown. On May 13, 1974, Special Provision 109, Open-Graded Friction Courses (plant mix seals), was adopted. This special provision was amended twice during 1975. The first, Special Provision 109A, included crushed granite as an allowable aggregate and raised the upper limit for asphalt cement from 8.5 percent to 9.0 percent. The second, Special Provision 109B, eliminated the requirement to construct the course higher in elevation than shoulders but retained the requirement to construct higher than concrete gutters.

These special provisions were superseded by the 1976 edition, and continued in the 1979 edition, of the Standard Specifications... (15,16), Section 405, Open Graded, Friction Courses. Excerpts of these specifications are cited here:

Description

The open-graded mixture is intended to provide a coarse-textured, well-draining, skid-resistant wearing surface for vehicular traffic. The thickness of the course shall be approximately 3/4 inch.

Bituminous Material

A. For Mixture. Asphalt cement shall be AC-20 in the range of 5.5 to 9.0 percent by weight of total mix. An antistripping additive shall be used to prevent stripping of the asphalt from the aggregate.

B. For Tack Coat. Tack coat shall be applied in accordance with requirements of Section 407, except emulsions shall not be diluted. The undiluted SS-1, SS-1H, RS-1, CSS-1, CSS-1H, AE-60, RC-70, or RC-250 shall be applied at an approximate rate of 0.8 pound (0.1 gallon) per square yard.

Aggregates

Aggregate for this mixture shall be either crushed gravel, crushed granite-type igneous rock, crushed slag, crushed quartzite, crushed lightweight aggregate, or an approved combination thereof. Gravel shall have a minimum insoluble content of 75 percent as determined by KM 64-223. Coarse aggregates shall conform to the following requirements:

Wear (except slag)	40% (maximum)
Wear (slag)	50% (maximum)
Soundness (5 cycles)	12% (maximum)
Unit Weight (lightweight)	65 pcf (maximum)
Unit Weight (slag)	70 pcf (maximum)

Sand, meeting the following requirements, will be permitted in an amount not to exceed 20 percent of the total aggregate in the mixture.

Wear (except slag)	40% (maximum)
Wear (slag only)	50% (maximum)

Friable particles

1.0% (maximum)

Aggregates for Open-Graded Friction Course, Type II, within the fraction retained on a No.-8 sieve shall have at least 95 percent of the particles containing one or more crushed faces and at least 75 percent containing 2 or more crushed faces.

Unless otherwise provided, crushed limestone will not be permitted as any part of the aggregate except as mineral filler.

Temperature Requirements

- | | |
|--------------------|---------------|
| A. Aggregate. | 200-260 deg F |
| B. Asphalt Cement. | 250-300 deg F |
| C. Mixture | |
| 1) At Plant: | 200-260 deg F |
| 2) Laying: | 180-260 deg F |

Gradation

<u>Sieve Size</u>	<u>Percent Passing</u>	
	<u>Type 1</u>	<u>Type 2</u>
1/2 inch	100	---
3/8 inch	90-100	100
No. 4	25-50	50-100
No. 8	05-15	10-30
No. 16	---	05-15
No. 200	02-05	02-05

For Type 1 mixes, the Engineer may approve a job-mix formula with a percentage passing the No.-8 sieve in excess of 15. Normal equipment for placing and compaction will apply except that rolling may be accomplished by means of a 5- to 8-ton steel wheel, tandem roller only. Rolling shall be held to a minimum. Excessive rolling shall be avoided. The rate of application shall be 65 pounds per square yard, except rate shall be 45 pounds per square yard for mixtures using lightweight aggregate.

Photographs of a new and a worn open-graded friction course, containing crushed gravel (Green River) are shown in Figures A-12 and A-13, respectively.

SPRINKLE TREATMENT (FOR ASPHALTIC-CONCRETE PAVEMENT)

The following was cited in a special note which was part of the contract for construction of five sections of overlay on US 31E in Nelson County. The special note was dated June 23, 1978. The construction was completed in September 1978.

Description

This work shall consist of the construction of a Bituminous Concrete Surface, Type B, and the application of a sprinkle treatment for the purpose of providing a skid-resistant wearing surface. The sprinkle treatment shall consist of graded, hot-precoated aggregate applied to the surface of the bituminous concrete mixture immediately

B. Weather Limitations. On Section 1, Section 401.06 of the 1976 Standard Specifications... will apply.

On Sections 2 through 5, no bituminous concrete surface shall be placed unless the ambient air temperature and the temperature of the existing surface is at least 50 degrees F.

C. Control Section. The Bituminous Concrete Surface, Type B, shall be constructed as specified in Section 402 of the 1976 Standard Specifications....

D. Sprinkle Treatment. On Sections 2 through 5 the Bituminous Concrete Surface, Type B, shall be constructed as specified in Section 402, except that immediately after the passage of the paver and prior to any rolling, the precoated aggregate shall be applied uniformly to the top of the bituminous concrete mat with the mechanical spreader.

The sprinkle aggregate shall be placed hot and shall cover 50 to 75 percent of the surface area. Application rates will vary between 5 to 15 pounds per square yard, as directed by the Engineer. The sprinkle aggregate shall be applied at a temperature above 250 degrees F and vehicles hauling the hot aggregate shall be kept covered and insulated.

Initial rolling shall be done immediately after application of the sprinkle aggregate, using a 3-wheel roller or tandem roller, and thereafter the normal rolling sequence shall be followed. Rubber-tired rollers will not be permitted.

BITUMINOUS PAVEMENT MILLING AND TEXTURING

Special Provision 36, dated September 25, 1978, to the 1976 Standard Specifications... (15) and continued as Special Provision 36B, dated July 26, 1979 (Figure A-15), to the 1979 Standard Specifications... (16) described the requirements for milling and texturing of bituminous pavements. Photographs of a milled surface on KY 80 in Pulaski County are shown in Figures A-16 and A-17.

TABLE A1. COMPOSITION LIMITS, SURFACE-COURSE MIXTURES

SIEVE SIZE	PREVIOUSLY CLASS I				FROM STANDARD SPECIFICATIONS(15,16)		
	TYPE B	TYPE B (MODIFIED)	TYPE A	TYPE A (MODIFIED)	1976		1979
					TYPE A	TYPE B	SURFACE
1/2 INCH	100	100	100	100	100	100	100
3/8 INCH	85-100	85-100	80-100	80-100	85-100	85-100	80-100
NO. 4	50-70	55-75	55-75	60-80	55-75	60-80	55-80
NO. 8	35-50	40-58	35-60	40-60	35-60	40-60	35-60
NO. 16	20-40	25-48	25-50	25-50	25-50	25-50	22-46
NO. 50	2-20	5-20	9-21	5-20	9-21	5-20	5-21
NO. 100	1-10	2-14	5-14	3-12	5-14	3-12	3-14
NO. 200	0-5	1-7	3-7	2-6	3-7	2-6	2-7
ASPHALT*	4-8	4-8	4-8	4-8	4-8	4-8	4-8

* Percent by weight of the total mixture. Asphalt content may be increased by as much as 1 1/2 percent above the maximum listed when needed to compensate for asphalt absorption by the aggregate.

APPENDIX B

PLOTS OF SKID NUMBERS VERSUS CUMULATIVE TRAFFIC FOR VARIOUS TYPES OF PAVEMENTS

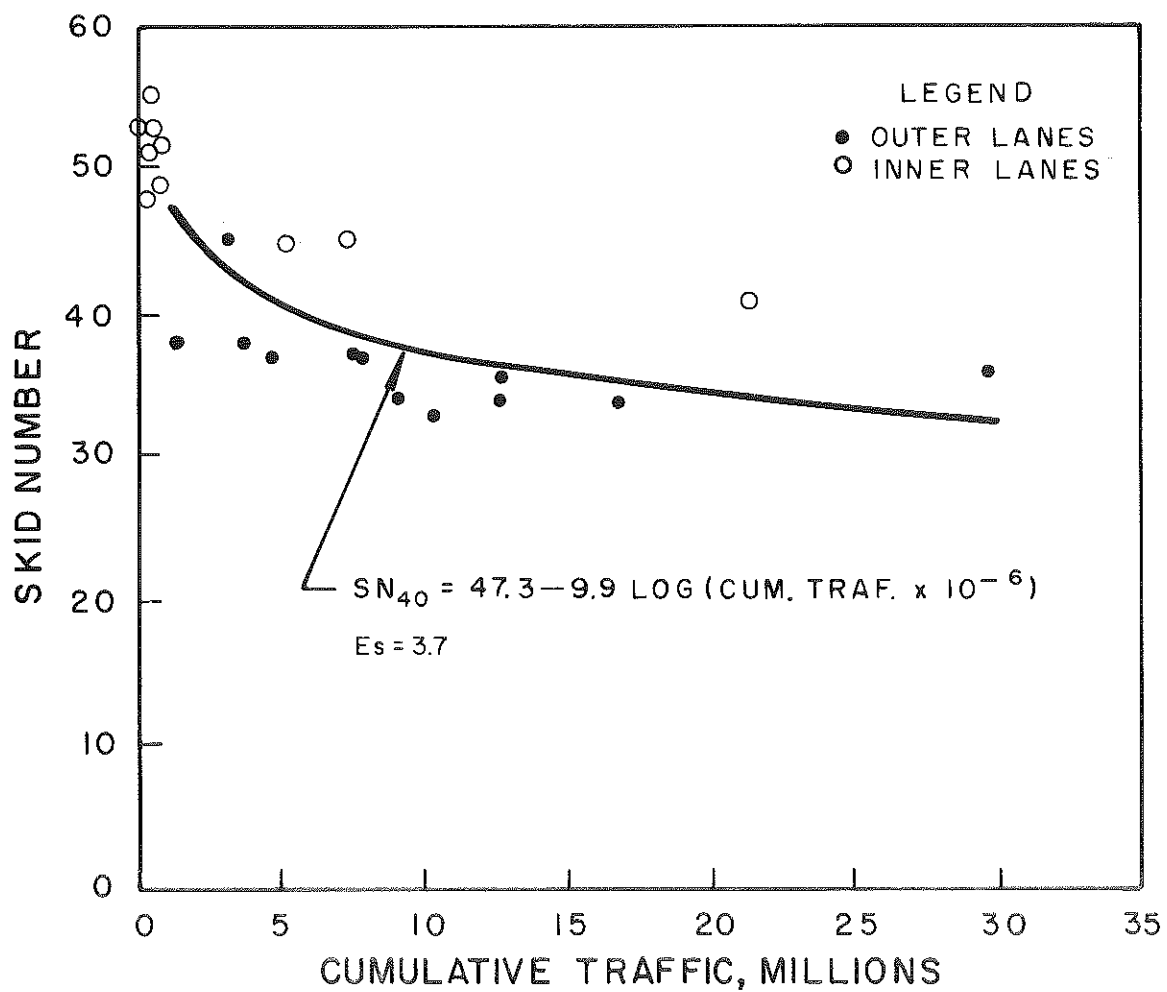


Figure B-1. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Interstate Routes; Tested during 1974.

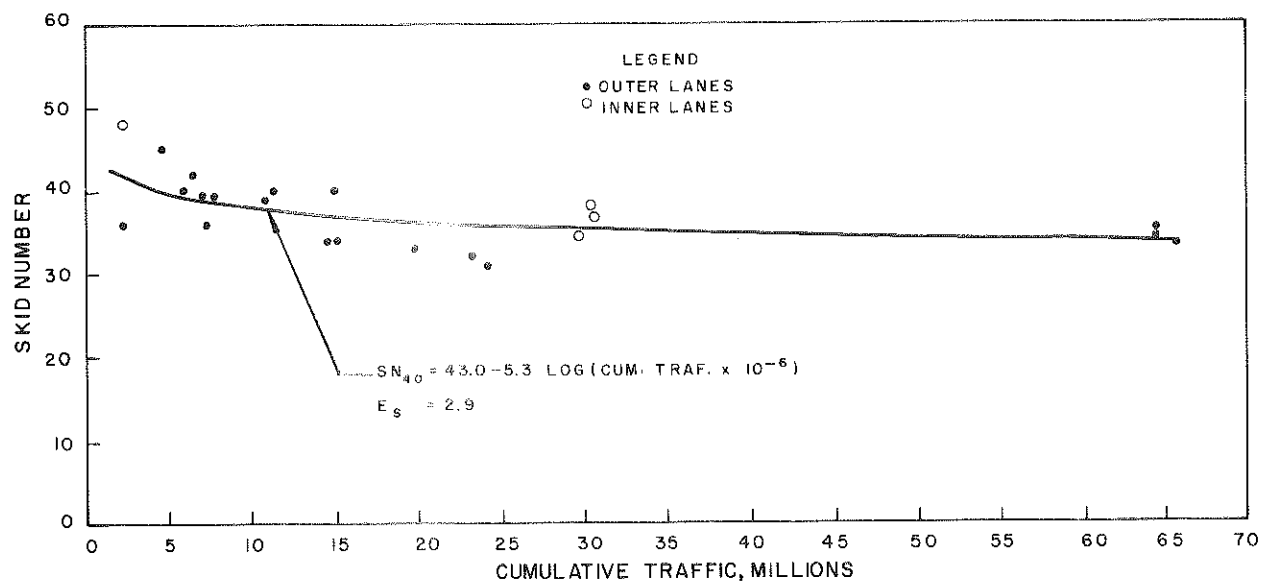


Figure B-2. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Interstate Routes; Tested during 1977.

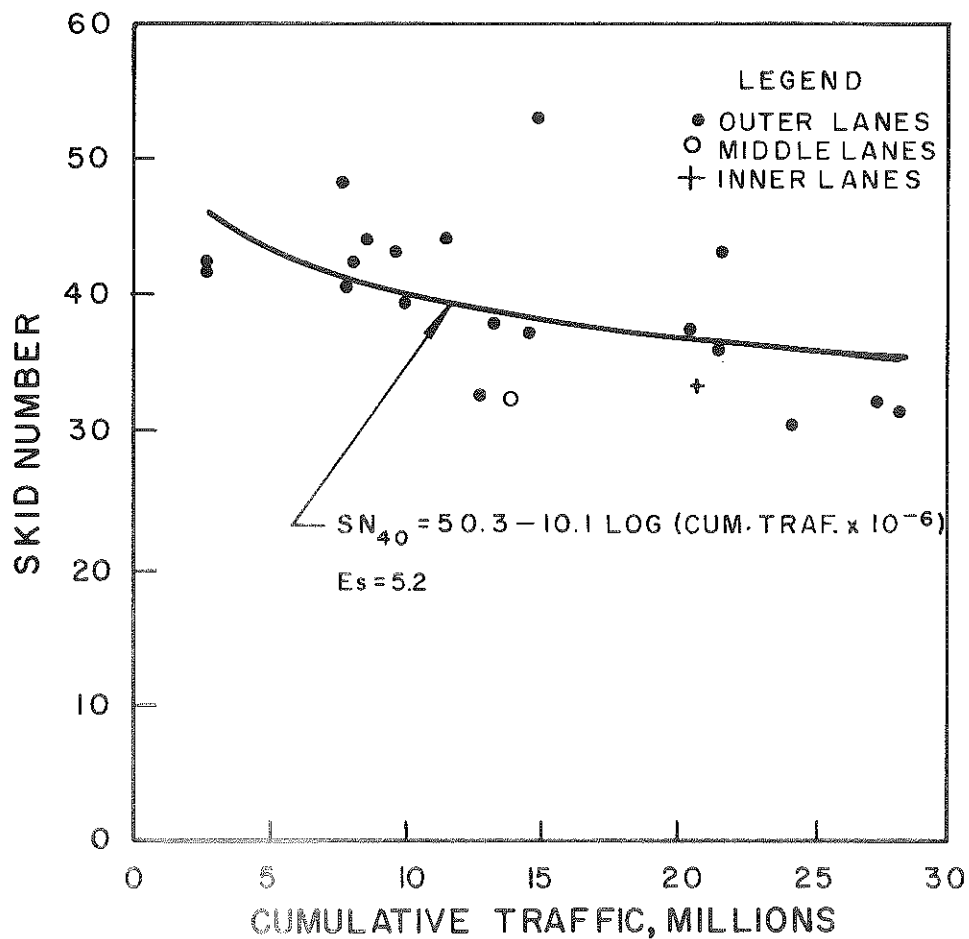


Figure B-3. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Interstate Routes; Tested during 1979.

Figure B-4. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Toll Roads; Tested during 1974.

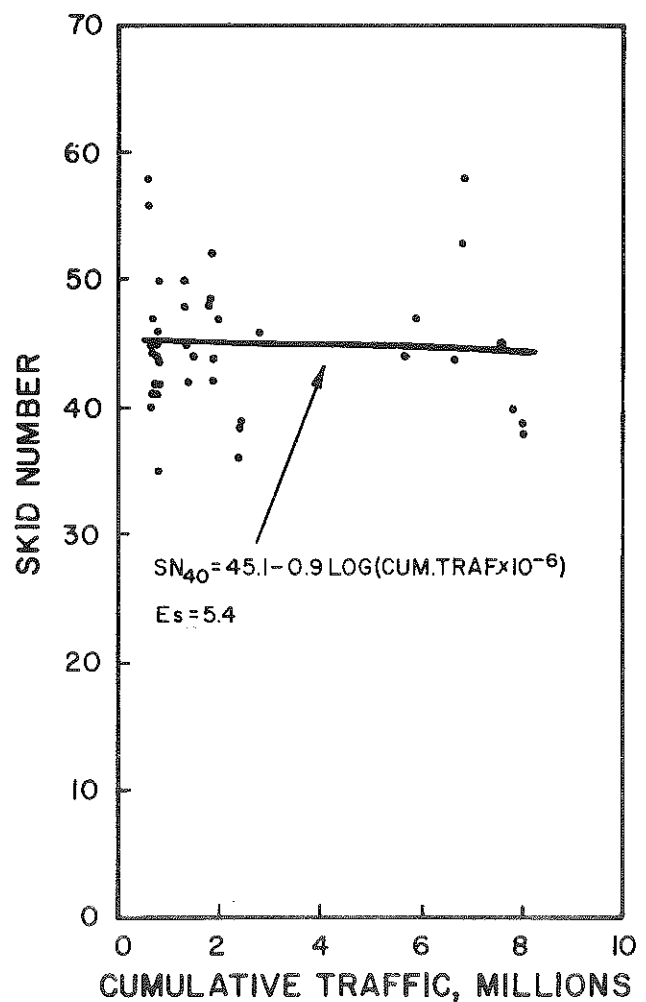
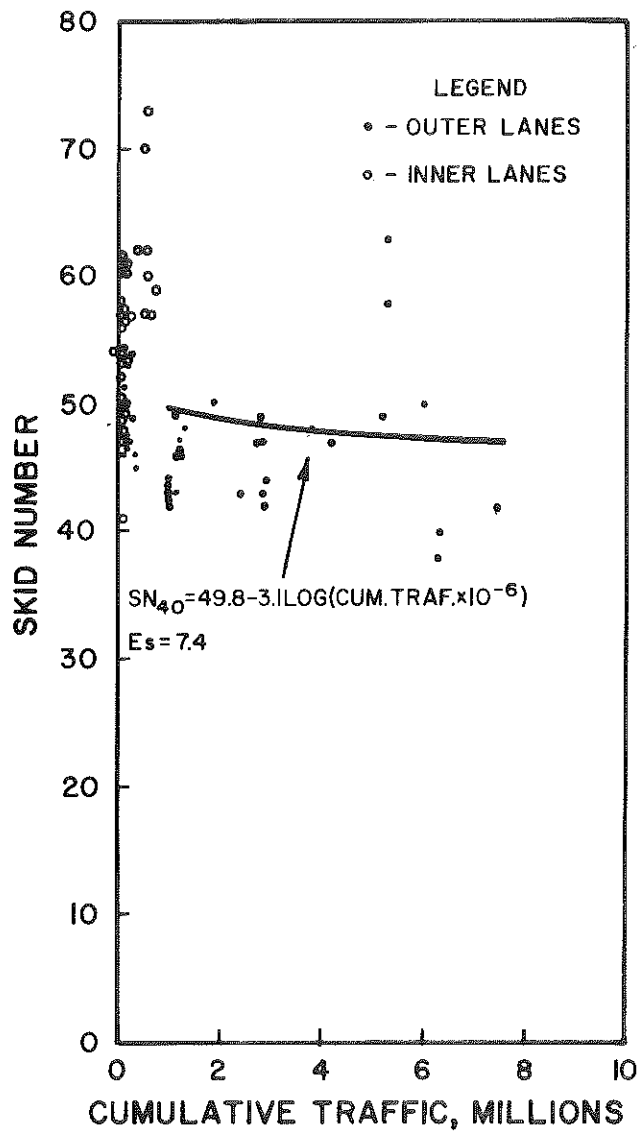


Figure B-5. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Toll Roads; Tested during 1977.

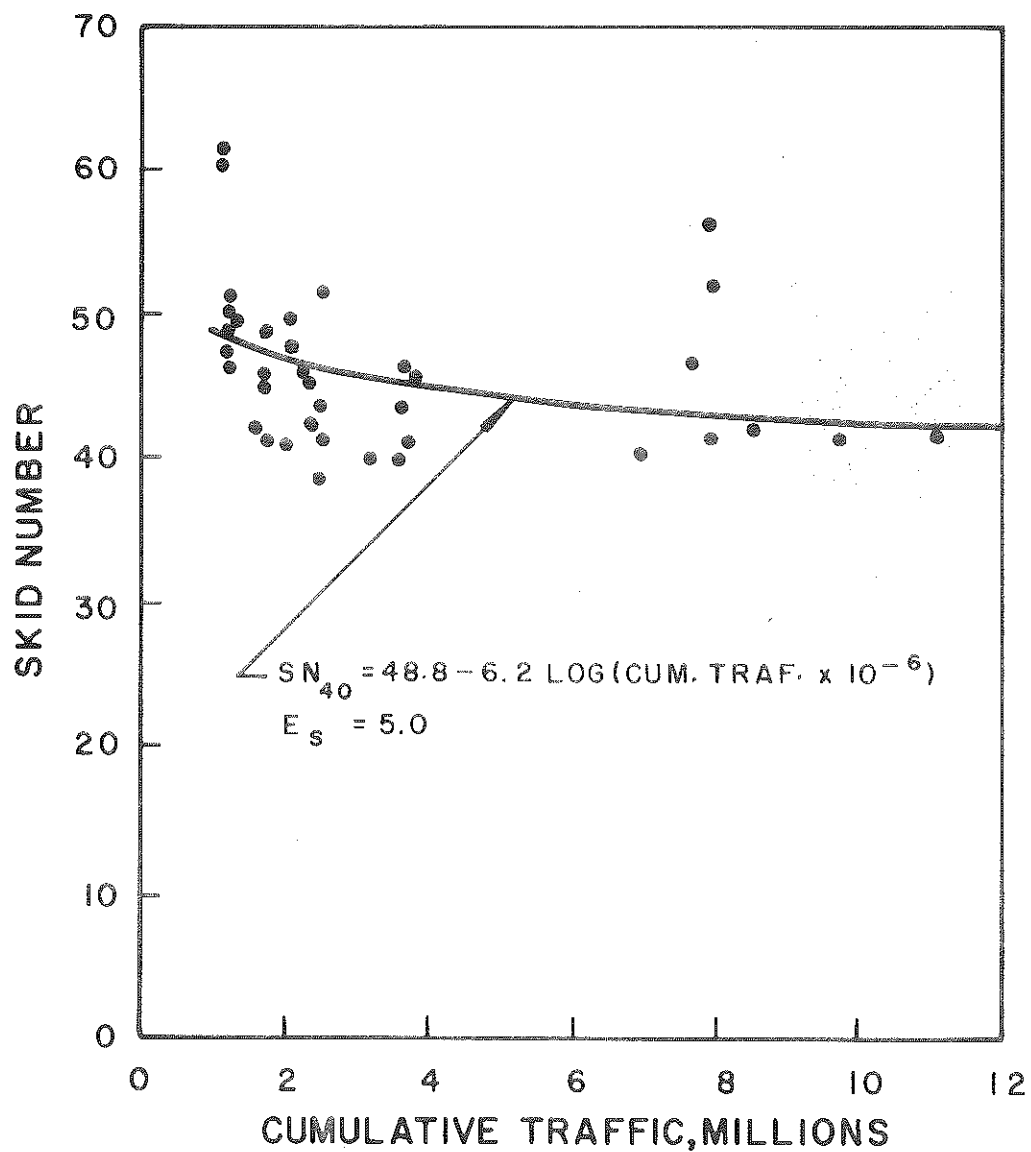


Figure B-6. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on Toll Roads; Tested during 1979.

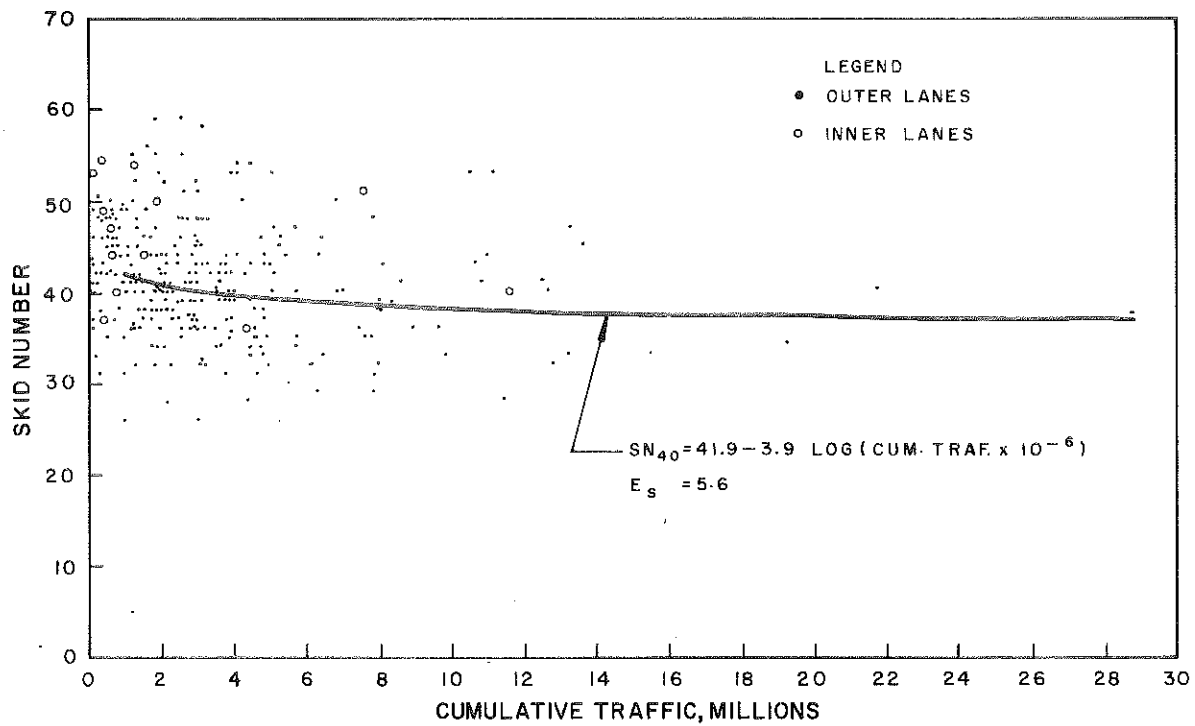


Figure B-7. Effect of Traffic on Skid Resistance of Bituminous Concrete Surfaces on US and KY Routes; Tested during 1975.

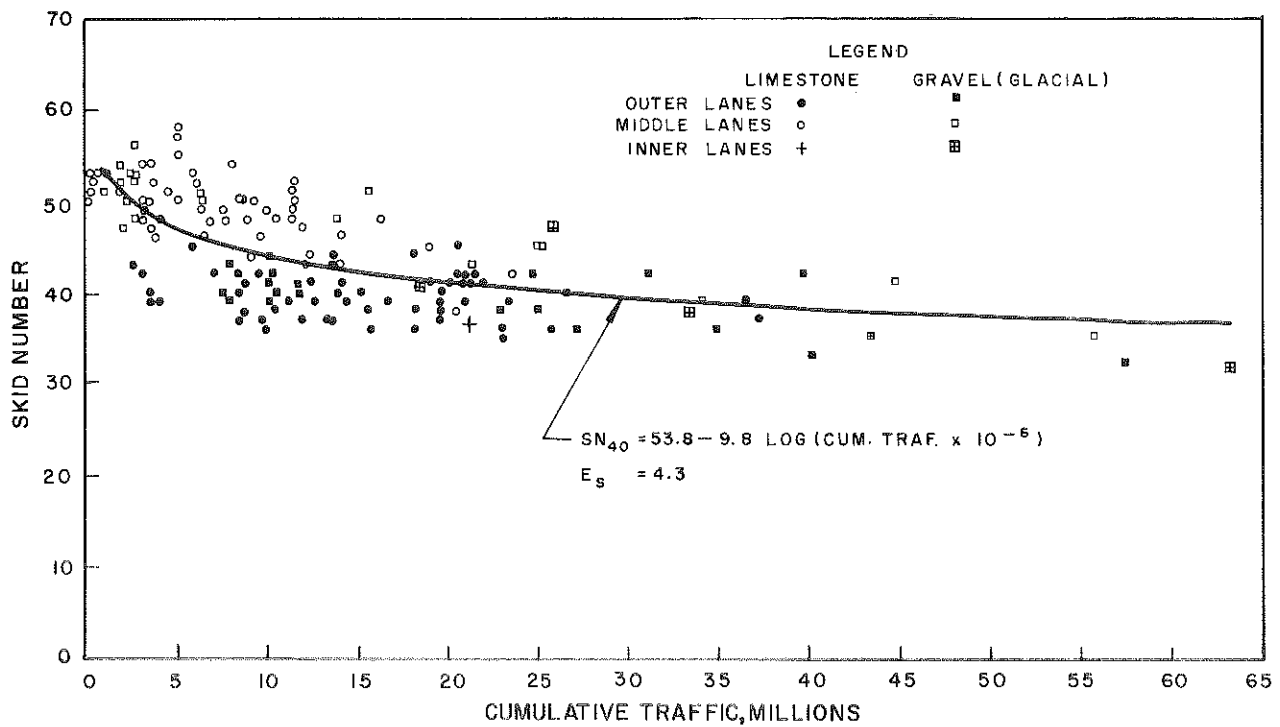


Figure B-8. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Interstate Routes; Tested during 1974.

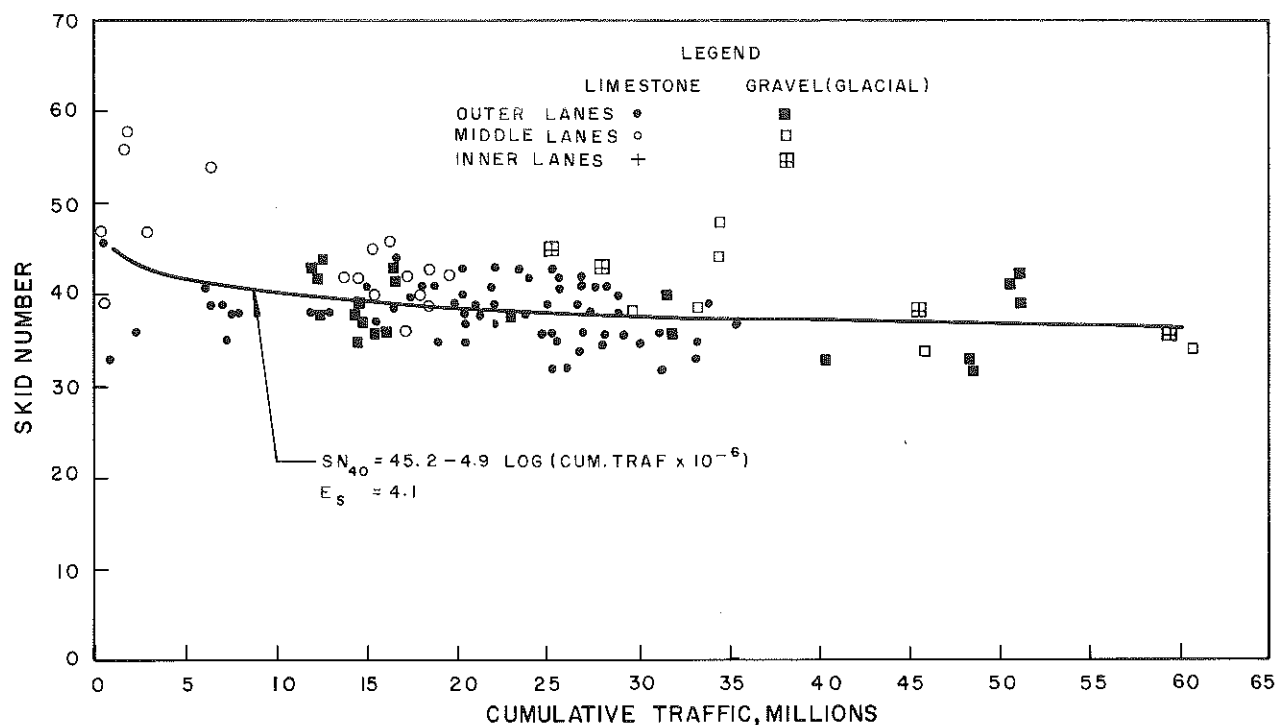


Figure B-9. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Interstate Routes; Tested during 1977.

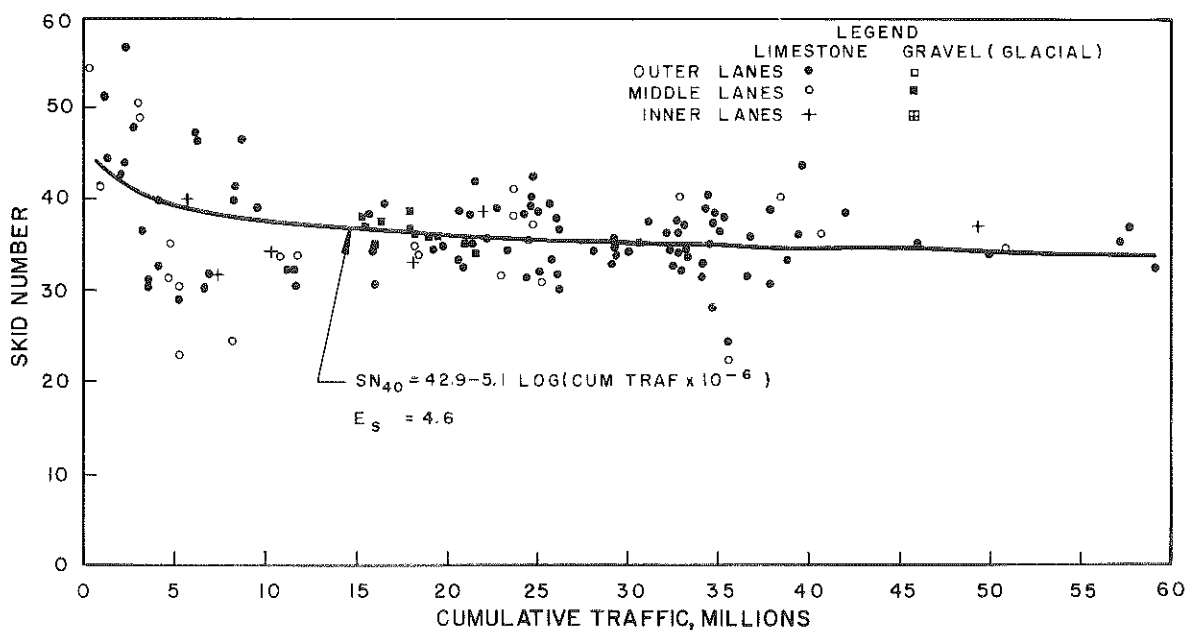


Figure B-10. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Interstate Routes; Tested during 1979.

Figure B-11. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Toll Roads; Tested during 1974.

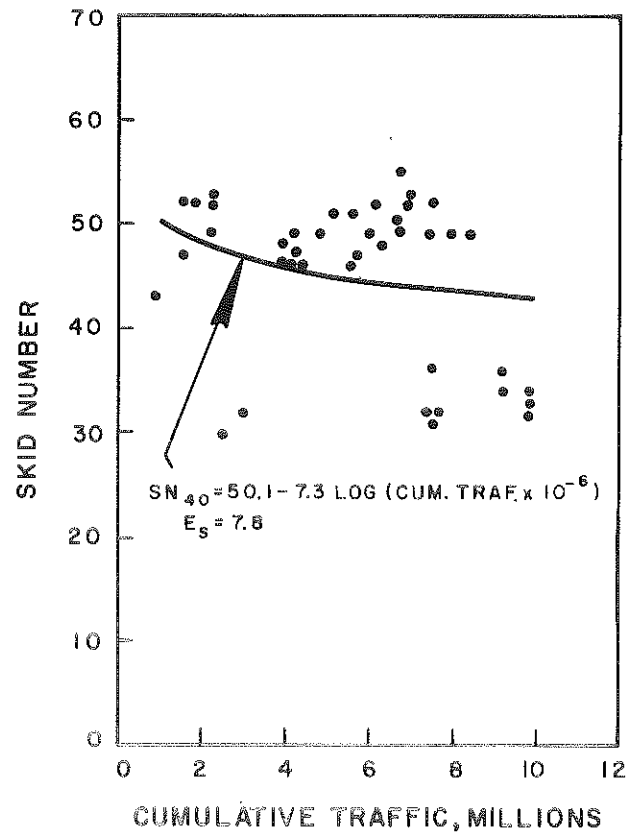
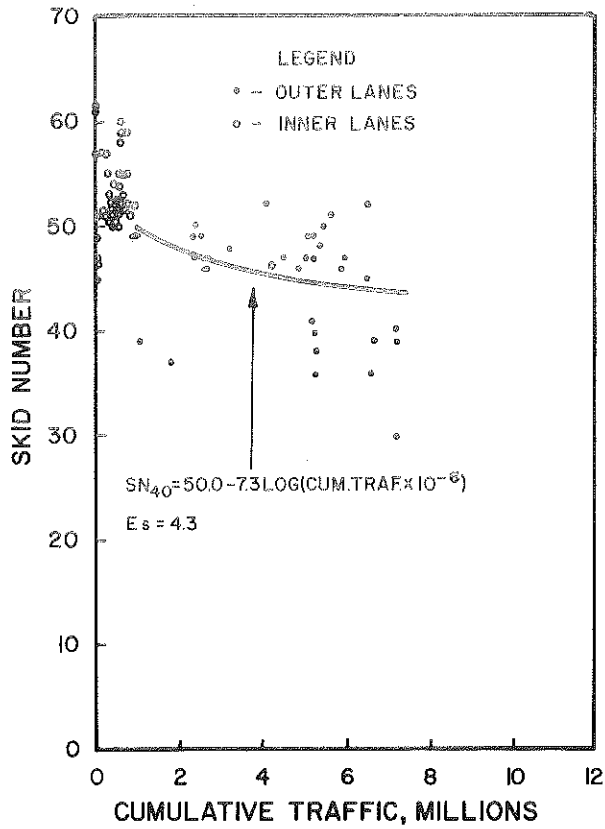


Figure B-12. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Toll Roads; Tested during 1977.

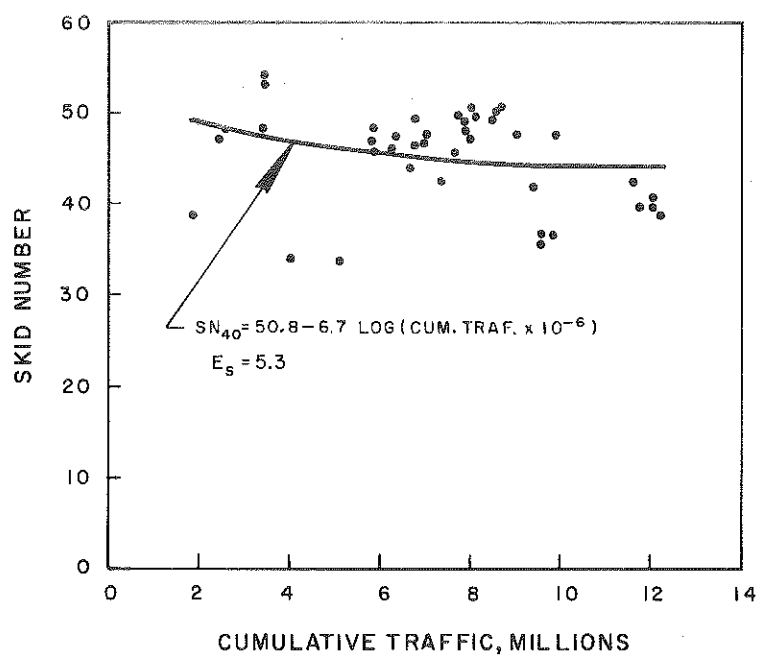


Figure B-13. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on Toll Roads; Tested during 1979.

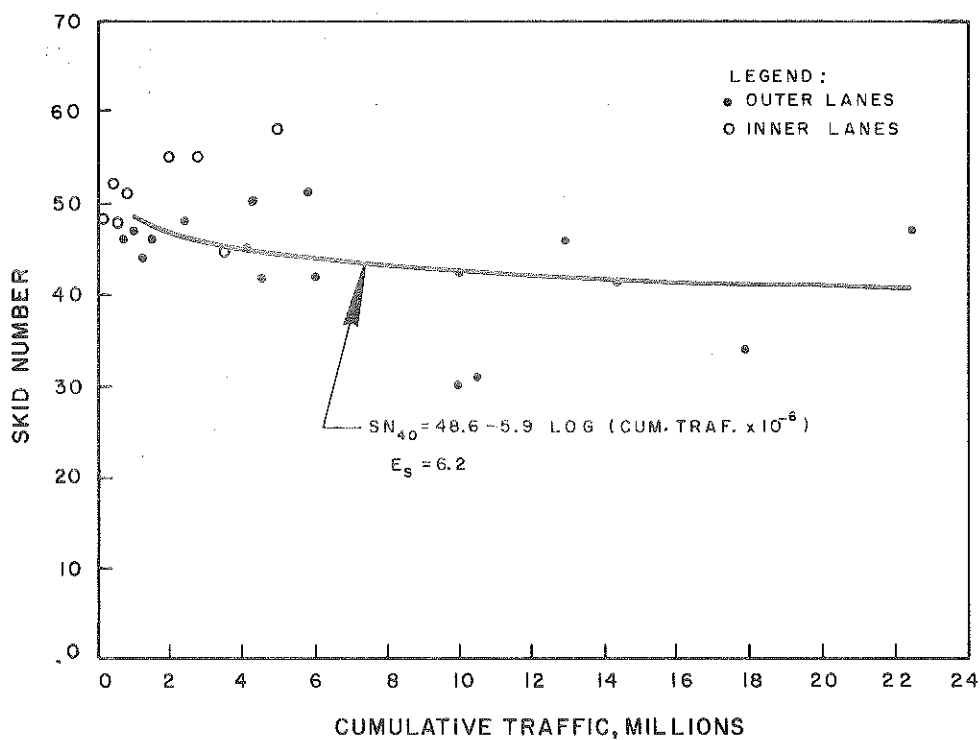


Figure B-14. Effect of Traffic on Skid Resistance of Portland Cement Concrete Surfaces on US and KY Routes; Tested during 1975.

APPENDIX C

SKID TEST DATA

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - INTERSTATE

PAGE 1

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9024	MC CRACKEN	1- 73	0.0- 1.0	1.0	INTER	10/74	75 4570	OUTER INNER	10/77 10/77	12 12	36 48	1.3 1.3	2.24 0.24	4110 440
I 9024	MC CRACKEN	1- 73	1.3- 4.3	3.0	INTER	10/74	75 4710 77 9330 75 4710 77 9330	OUTER OUTER INNER INNER	10/77 8/79 10/77 8/79	19 9 10 5	36 29 47 42	2.6 3.8 0.4 1.3	2.31 5.39 0.26 0.93	4240 6100 470 1100
I 9064	JEFFERSON	5- 56	4.5- 4.9	0.4	INTER	10/65	77 42560	OUTER MIDDLE INNER	7/79 7/79 7/79	3 2 2	33 32 34	0.2 0.0 0.0	12.85 13.86 20.77	5100 5500 8300
I 9064	CLARK	7- 25	89.5-101.7	12.2	INTER	10/73	75 13370 77 13660	OUTER OUTER	9/77 9/79	95 97	39 44	2.1 2.0	7.60 11.49	10600 10600
I 9064	CLARK -MONTGOMERY	7- 25 7- 87	101.7-112.4	10.7	INTER	10/73	75 7550 77 9460	OUTER OUTER	9/77 9/79	80 83	45 48	2.2 2.8	4.63 7.68	6450 7100
I 9064	ROWAN -CARTER	9-103 9- 22	145.9-154.2	8.3	INTER	10/69	75 5350 77 6180 75 5350	OUTER OUTER INNER	8/74 9/77 9/79 8/74	27 61 68 27	42 42 44 53	3.0 2.3 2.7 2.8	3.75 6.46 8.52 0.44	4260 4460 4700 500
I 9064	CARTER	9- 22	154.2-161.5	7.3	INTER	10/69	75 5000 77 6520 75 5000	OUTER OUTER INNER	8/74 9/77 9/79 8/74	23 56 58 23	45 40 42 55	2.7 2.9 3.0 2.3	3.39 5.94 8.18 0.39	3860 4100 4500 440
I 9064	CARTER	9- 22	161.5-168.5	7.0	INTER	9/68	75 5000 77 7540 75 5000	OUTER OUTER OUTER INNER	8/74 9/77 9/79 8/74	23 57 57 18	37 36 40 51	3.4 2.2 2.1 2.5	4.83 7.38 10.00 0.58	4480 4480 5000 530
I 9064	CARTER	9- 22	168.5-171.9	3.4	INTER	10/69	75 6390 77 8200 75 6390	OUTER OUTER OUTER INNER	8/74 9/77 9/79 8/74	10 24 27 11	38 39 43 53	3.2 2.4 2.3 2.7	3.79 6.97 9.68 0.44	4310 4810 5300 500
I 9064	CARTER	9- 22	171.9-181.4	9.5	INTER	9/73	75 6820 77 9290 75 6820	OUTER OUTER OUTER INNER	8/74 9/77 9/79 8/74	36 72 75 34	38 37 41 48	3.4 2.3 2.4 3.4	1.54 4.90 7.95 0.20	9280 6680 7200 1210
I 9064	BOYD	9- 10	181.4-185.5	4.1	INTER	11/64	75 6380 77 7550 75 6380	OUTER OUTER OUTER INNER	8/74 9/77 9/79 8/74	16 31 32 13	37 39 38 49	3.5 1.5 2.1 3.6	7.65 10.82 13.30 0.78	4310 4620 4900 440
I 9064	BOYD	9- 10	185.5-190.4	4.9	INTER	11/64	75 7500 77 10000 75 7500	OUTER OUTER OUTER INNER	8/74 9/77 9/79 8/74	19 36 39 20	37 40 38 52	3.4 3.0 3.7 2.8	7.69 11.35 14.58 0.93	4330 4840 5400 520

CLASS I, TYPE A AND TYPE A(MODIFIED), BITUMINOUS SURFACE - INTERSTATE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9064	BOYD	9- 10	190.4-191.0	0.6	INTER	11/64	77 10740	OUTER	9/79	5	53	1.2	14.83	5500
I 9065	HART	4- 50	61.4- 64.1	2.7	INTER	11/67	75 17500	OUTER	8/74	10	34	2.4	12.63	10200
							77 17970	OUTER	9/77	21	33	1.7	19.80	11000
							75 17500	OUTER	7/79	22	31	2.5	24.13	11300
								INNER	8/74	11	41	2.4	4.65	3750
I 9065	HART	4- 50	64.1- 70.4	6.3	INTER	10/65	75 17760	OUTER	8/74	14	34	1.9	16.85	10410
							77 17070	OUTER	9/77	48	31	1.3	24.10	11050
								OUTER	7/79	47	32	2.2	28.18	11200
I 9065	HART -LARUE	4- 50 4- 62	70.4- 76.0	5.6	INTER	9/65	75 18000	OUTER	9/77	42	32	1.4	23.41	10660
							77 16970	OUTER	7/79	44	32	2.4	27.45	10900
I 9075	ROCKCASTLE	8-102	50.8- 59.0	8.2	INTER	10/69	75 17260	OUTER	8/74	31	34	3.6	9.08	10260
								INNER	8/74	32	42	3.6	3.78	4270
I 9075	ROCKCASTLE	8-102	59.0- 61.8	2.8	INTER	1/68	75 17260	OUTER	8/74	12	36	2.8	12.75	10590
								INNER	8/74	13	45	2.1	5.29	4390
I 9075	ROCKCASTLE	8-102	61.8- 65.2	3.4	INTER	7/68	75 17760	OUTER	9/74	14	33	3.0	10.43	9240
								INNER	9/74	12	45	3.3	4.87	4320
I 9075	ROCKCASTLE	8-102	50.8- 60.6	9.8	INTER	8/78	77 21130	OUTER	8/79	78	42	6.0	2.66	14600
I 9075	ROCKCASTLE	8-102	61.0- 65.2	4.2	INTER	8/78	77 22590	OUTER	8/79	36	42	2.7	2.79	15300
I 9075	MADISON	7- 76	87.2- 89.9	2.7	INTER	7/72	75 23400	OUTER	9/77	22	34	1.5	14.77	15610
							77 29820	OUTER	8/79	23	36	1.4	21.52	16600
I 9075	MADISON	7- 76	89.9- 97.5	7.6	INTER	7/72	75 22420	OUTER	9/77	62	34	2.0	15.03	15900
							77 23390	OUTER	8/79	62	38	1.9	20.57	15900
I 9075	FAYETTE	7- 34	97.5-100.4	2.9	INTER	7/72	75 22420	OUTER	9/77	20	40	2.8	15.04	15900
							77 28930	OUTER	8/79	21	43	3.2	21.68	16800
I 9264	JEFFERSON	5- 56	8.1- 19.7	11.6	INTER	9/69	75 87180	OUTER	10/74	43	36	4.5	29.79	32220
								INNER	10/74	42	41	3.6	21.31	23050
I 9264	JEFFERSON	5- 56	8.2- 12.2	4.0	INTER	9/69	75 76000	OUTER	8/77	30	34	2.7	64.12	44590
								INNER	8/77	32	38	2.3	30.55	21250
I 9264	JEFFERSON	5- 56	12.2- 15.8	3.6	INTER	9/69	75 88000	OUTER	8/77	28	33	4.2	66.32	46120
								INNER	8/77	26	35	2.9	29.64	20610
I 9264	JEFFERSON	5- 56	15.8- 19.7	3.9	INTER	9/69	75 77000	OUTER	8/77	35	36	3.8	64.27	44700
								INNER	8/77	34	37	2.8	30.51	21220

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - TOLL ROADS

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9000	WOLFE	10-119	42.7- 49.1	6.4	FAP-PKY	11/63	75 2190	OUTER	7/74	22	44	3.6	2.89	1480
PK9000	WOLFE	10-119	49.1- 55.2	6.1	FAP-PKY	10/63	75 2190	OUTER	7/74	23	49	2.7	2.77	1410
PK9000	WOLFE	10-119	55.2- 59.3	4.1	FAP-PKY	11/63	75 2190	OUTER	7/74	16	47	2.9	2.90	1490
PK9000	-MORGAN MORGAN	10- 88 10- 88	59.3- 62.8	3.5	FAP-PKY	10/63	75 2230	OUTER	7/74	14	47	2.4	2.71	1380
PK9000	MAGOFFIN	10- 77	62.8- 67.2	4.4	FAP-PKY	10/63	75 2230	OUTER	7/74	18	43	4.4	2.85	1450
PK9000	MAGOFFIN	10- 77	67.2- 71.5	4.3	FAP-PKY	11/63	75 2230	OUTER	7/74	18	42	4.5	2.84	1460
PK9000	MAGOFFIN	10- 77	71.5- 75.6	4.1	FAP-PKY	11/63	75 2230	OUTER	7/74	13	43	4.1	2.36	1210
PK9000	WOLFE	10-119	43.1- 46.2	3.1	FAP-PKY	7/75	75 2190 77 3260	OUTER OUTER	7/77 9/79	12 13	42 47	3.1 2.9	0.79 2.18	2190 2900
PK9000	WOLFE	10-119	46.2- 53.3	7.1	FAP-PKY	7/75	75 2190 77 2280	OUTER OUTER	7/77 9/79	28 27	42 45	3.3 3.6	0.79 1.70	2190 2300
PK9000	WOLFE -MORGAN	10-119 10- 88	53.3- 57.2	3.9	FAP-PKY	7/75	75 2190 77 2240	OUTER OUTER	7/77 9/79	15 17	41 48	2.0 4.5	0.79 1.69	2190 2200
PK9000	MAGOFFIN	10- 77	57.2- 60.4	3.2	FAP-PKY	7/75	75 2230	OUTER	7/77	11	44	2.6	0.80	2230
PK9000	WOLFE	10-119	57.2- 60.4	3.2	FAP-PKY	7/75	77 2330	OUTER	9/79	12	49	2.1	1.74	2300
PK9000	-MORGAN MAGOFFIN	10- 88 10- 77	60.4- 71.8	11.4	FAP-PKY	7/75	75 2230	OUTER	7/77	45	41	3.5	0.80	2230
PK9000	MORGAN	10- 88	60.4- 71.7	11.3	FAP-PKY	7/75	77 2370	OUTER	9/79	11	46	4.1	1.76	2300
PK9000	-MAGOFFIN MAGOFFIN	10- 77 10- 77	71.8- 74.8	3.0	FAP-PKY	7/75	75 2230	OUTER	7/77	11	35	4.6	0.80	2230
PK9001	LYON -CALDWELL	1- 72 2- 17	3.7- 10.3	6.6	FAP-PKY	11/68	75 2140 77 2620 75 2140	OUTER OUTER INNER	7/74 6/77 7/79 7/74	14 26 29 14	50 46 46 60	3.1 2.3 4.5 2.3	1.76 2.82 3.80 0.17	1690 1800 1900 160
PK9001	CALDWELL	2- 17	10.3- 14.9	4.6	FAP-PKY	9/63	75 3040 77 2770 75 3040	OUTER OUTER INNER	7/74 6/77 7/79 7/74	12 18 18 13	50 45 42 58	2.3 1.6 3.3 1.8	6.09 7.58 8.55 0.67	3070 3020 3000 340
PK9001	CALDWELL	2- 17	14.9- 21.2	6.3	FAP-PKY	11/63	75 3040 77 3480 75 3040	OUTER OUTER INNER	7/74 6/77 8/79 7/74	20 25 25 19	49 44 42 62	2.2 1.7 3.6 4.5	5.20 6.69 7.97 0.57	2660 2700 2800 290
PK9001	CALDWELL -HOPKINS	2- 17 2- 54	21.2- 25.7	4.5	FAP-PKY	11/63	75 3040 77 3480 75 3040	OUTER OUTER INNER	7/74 6/77 8/79 7/74	9 18 18 7	47 44 41 60	2.3 3.1 3.3 3.7	4.20 5.69 6.97 0.57	2150 2290 2400 290

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9001	GRAYSON -HARDIN	4- 43 4- 47	117.2-123.5	6.3	FAP-PKY	8/63	75 3590	OUTER	9/74	21	38	2.4	6.30	3110
							77 3640	OUTER	6/77	25	38	1.8	7.95	3150
							77 3640	OUTER	7/79	25	43	4.8	9.22	3200
							75 3590	INNER	9/74	20	57	2.8	0.68	340
PK9001	HARDIN	4- 47	123.5-131.0	7.5	FAP-PKY	10/63	75 3590	OUTER	9/74	31	42	2.1	6.23	3120
							77 5220	OUTER	6/77	31	40	2.5	7.88	3160
							77 5220	OUTER	7/79	29	41	2.5	9.76	3400
							75 3590	INNER	9/74	29	59	2.0	0.68	340
PK9001	HARDIN	4- 47	131.0-136.8	5.8	FAP-PKY	8/63	75 3590	OUTER	9/74	19	40	1.8	6.30	3110
							77 8780	OUTER	6/77	21	39	2.9	7.95	3150
							77 8780	OUTER	7/79	24	42	2.3	11.09	3800
							75 3590	INNER	9/74	18	57	1.9	0.68	340
PK9002	HARDIN -NELSON	4- 47 4- 90	0.0- 15.8	15.8	FAP-PKY	10/65	75 3350	OUTER	10/74	60	58	2.9	5.29	3230
							77 3390	OUTER	6/77	58	53	2.3	6.82	3200
							77 3390	OUTER	7/79	63	52	2.9	7.98	3200
							75 3350	INNER	10/74	60	70	2.8	0.58	350
PK9002	NELSON	4- 90	15.8- 23.8	8.0	FAP-PKY	10/65	75 3350	OUTER	10/74	29	63	2.6	5.29	3230
							77 3330	OUTER	6/77	32	58	2.6	6.82	3200
							77 3330	OUTER	7/79	30	56	1.8	7.95	3200
							75 3350	INNER	10/74	29	73	2.7	0.58	350
PK9002	ANDERSON -WOODFORD	7- 3 7-120	59.6- 71.1	11.5	FAP-PKY	10/65	75 4580	OUTER	10/74	45	48	3.7	3.79	2310
							77 5390	OUTER	6/77	43	47	1.9	5.85	2740
							77 5390	OUTER	7/79	47	47	2.0	7.68	3100
							75 4580	INNER	10/74	45	62	2.9	0.43	260
PK9003	FULTON	1- 38	0.0- 2.0	2.0	FAP-PKY	11/68	75 1530	OUTER	7/74	9	48	3.1	1.26	1210
							77 3390	OUTER	10/77	7	47	2.9	1.97	1210
							77 3390	OUTER	7/79	8	47	3.2	3.27	1700
							75 1530	INNER	7/74	8	53	3.1	0.07	60
PK9003	FULTON -HICKMAN	1- 38 1- 53	2.0- 8.4	6.4	FAP-PKY	11/68	75 1240	OUTER	7/74	23	49	2.9	1.22	1160
							77 1800	OUTER	10/77	26	52	1.6	1.89	1160
							77 1800	OUTER	7/79	25	52	1.6	2.53	1300
							75 1240	INNER	7/74	22	52	1.9	0.06	60
PK9003	GRAVES	1- 42	8.4- 13.3	4.9	FAP-PKY	11/68	75 1210	OUTER	7/74	17	47	2.3	1.17	1110
							77 1580	OUTER	10/77	20	48	1.7	1.80	1110
							77 1580	OUTER	7/79	19	45	2.3	2.37	1200
							75 1210	INNER	7/74	16	47	2.5	0.06	60
PK9003	GRAVES	1- 42	13.3- 21.9	8.6	FAP-PKY	11/68	75 1210	OUTER	7/74	21	46	2.1	1.17	1110
							77 1580	OUTER	10/77	33	48	3.3	1.80	1110
							77 1580	OUTER	7/79	31	46	2.6	2.37	1200
							75 1210	INNER	7/74	19	48	1.8	0.06	60

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9003	GRAVES -MARSHALL	1- 42 1- 79	24.7- 39.9	15.2	FAP-PKY	11/68	75 1250	OUTER	7/74	50	46	2.9	1.24	1190
								OUTER	10/77	59	44	1.7	1.94	1190
							77 1670	OUTER	7/79	59	42	1.8	2.52	1300
							75 1250	INNER	7/74	49	61	3.0	0.07	60
PK9003	MARSHALL	1- 79	39.9- 52.3	12.4	FAP-PKY	11/68	75 1250	OUTER	7/74	41	46	3.0	1.24	1190
								OUTER	10/77	50	42	3.0	1.94	1190
							77 1610	OUTER	7/79	50	39	3.5	2.49	1300
							75 1250	INNER	7/74	41	61	2.2	0.07	60
PK9006	LAUREL -CLAY	11- 63 11- 26	8.8- 15.0	6.2	FAP-PKY	10/71	75 2540	OUTER	7/74	24	42	2.7	1.03	2030
								OUTER	6/77	22	39	2.9	2.37	2290
							77 3140	OUTER	8/79	26	44	4.4	3.66	2600
PK9006	CLAY	11- 26	15.0- 20.5	5.5	FAP-PKY	10/71	75 2540	OUTER	7/74	23	43	3.4	1.03	2030
								OUTER	6/77	20	36	3.8	2.37	2290
							77 3140	OUTER	8/79	21	40	7.0	3.66	2600
PK9006	CLAY -LESLIE	11- 26 11- 66	35.3- 45.7	10.4	FAP-PKY	10/74	75 1220	OUTER	6/77	41	47	3.2	0.59	1210
							77 2300	OUTER	8/79	42	42	3.9	1.59	1800
PK9006	LESLIE -PERRY	11- 66 10- 97	45.7- 59.1	13.4	FAP-PKY	10/74	75 1220	OUTER	6/77	53	45	3.0	0.59	1210
							77 2520	OUTER	8/79	53	42	4.1	1.69	1900
PK9007	WARREN	3-114	0.0- 7.1	7.1	FAP-PKY	8/73	75 2430	OUTER	8/74	28	44	2.9	1.00	5310
								OUTER	6/77	28	40	2.3	2.18	3100
							77 4220	OUTER	6/79	28	41	3.3	3.72	3500
							75 2430	INNER	8/74	27	49	2.6	0.13	670
PK9007	WARREN	3-114	7.1- 17.8	10.7	FAP-PKY	8/73	75 2430	OUTER	8/74	40	43	3.1	1.00	5310
								OUTER	6/77	43	41	2.0	2.18	3100
							77 2960	OUTER	6/79	42	40	3.4	3.22	3000
							75 2430	INNER	8/74	41	49	2.9	0.13	670
PK9007	BUTLER	3- 16	17.8- 25.0	7.2	FAP-PKY	8/73	75 2430	OUTER	8/74	29	46	2.0	0.31	1660
								OUTER	6/77	28	44	0.9	1.49	2110
							77 2960	OUTER	6/79	28	44	2.8	2.53	2400
							75 2430	INNER	8/74	27	49	3.8	0.01	30
PK9007	BUTLER	3- 16	25.0- 32.6	7.6	FAP-PKY	8/73	75 2250	OUTER	8/74	29	45	2.0	0.32	1710
								OUTER	6/77	29	42	1.6	1.41	2010
							77 2780	OUTER	6/79	31	42	3.5	2.41	2300
							75 2250	INNER	8/74	27	50	2.0	0.01	70
PK9008	BARREN	3- 5	0.0- 8.2	8.2	FAP-PKY	2/73	75 1950	OUTER	8/74	29	49	4.0	0.30	1070
								OUTER	9/77	32	50	2.1	1.34	1590
							77 2350	OUTER	6/79	32	50	3.5	2.09	1800
							75 1950	INNER	8/74	26	57	3.4	0.02	60

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9008	BARREN	3- 5	8.2- 16.0	7.8	FAP-PKY	2/73	75 1950	OUTER	8/74	27	54	2.7	0.30	1070
							77 2460	OUTER	9/77	32	48	2.3	1.34	1590
							75 1950	OUTER	6/79	32	48	3.6	2.13	1800
								INNER	8/74	24	54	2.3	0.02	60
PK9008	BARREN -METCALF	3- 5 3- 85	16.0- 24.1	8.1	FAP-PKY	2/73	75 1140	OUTER	8/74	29	54	1.8	0.14	510
							77 1420	OUTER	9/77	33	50	1.1	0.76	900
							75 1140	OUTER	6/79	32	50	2.0	1.23	1100
								INNER	8/74	27	60	2.5	0.01	40
PK9008	METCALF	3- 85	24.1- 33.9	9.8	FAP-PKY	2/73	75 1140	OUTER	8/74	31	50	3.2	0.14	510
							77 1420	OUTER	9/77	39	46	2.4	0.76	900
							75 1140	OUTER	6/79	40	46	2.8	1.23	1100
								INNER	8/74	30	61	2.6	0.01	40
PK9008	METCALF -ADAIR	3- 85 8- 1	33.9- 43.9	10.0	FAP-PKY	9/73	75 1140	OUTER	8/74	39	53	2.0	0.07	400
							77 1420	OUTER	9/77	40	58	1.9	0.69	930
							75 1140	OUTER	6/79	39	62	2.4	1.16	1100
								INNER	8/74	36	58	2.6	0.00	10
PK9008	ADAIR	8- 1	43.9- 53.1	9.2	FAP-PKY	9/73	75 1150	OUTER	8/74	35	52	2.8	0.06	370
							77 1440	OUTER	7/77	33	56	2.7	0.65	930
							75 1150	OUTER	6/79	36	61	1.6	1.16	1100
								INNER	8/74	39	56	2.6	0.00	10
PK9008	ADAIR -RUSSELL	8- 1 8-104	53.1- 62.6	9.5	FAP-PKY	9/73	75 1150	OUTER	8/74	33	46	1.6	0.18	1080
							77 1450	OUTER	7/77	36	45	1.8	0.77	1100
							75 1150	OUTER	6/79	37	50	2.6	1.29	1200
								INNER	8/74	33	56	2.2	0.01	60
PK9008	RUSSELL	8-104	62.6- 71.3	8.7	FAP-PKY	1/74	75 1150	OUTER	8/74	33	48	3.9	0.12	1130
							77 1450	OUTER	7/77	34	45	1.9	0.71	1110
							75 1150	OUTER	6/79	32	51	2.5	1.23	1200
								INNER	8/74	34	53	3.7	0.00	10
PK9008	RUSSELL -PULASKI	8-104 8-100	71.3- 76.5	5.2	FAP-PKY	1/74	75 1150	OUTER	8/74	20	47	1.8	0.12	1130
							77 1450	OUTER	7/77	22	44	1.4	0.71	1110
							75 1150	OUTER	6/79	19	49	3.3	1.23	1200
								INNER	8/74	18	52	2.3	0.00	10
PK9008	PULASKI	8-100	76.5- 84.4	7.9	FAP-PKY	1/74	75 1150	OUTER	8/74	29	46	2.6	0.12	1130
							77 1450	OUTER	7/77	31	45	2.0	0.71	1110
							75 1150	OUTER	6/79	33	47	3.0	1.23	1200
								INNER	8/74	32	52	2.1	0.00	10
PK9008	PULASKI	8-100	84.4- 88.6	4.2	FAP-PKY	1/74	75 1150	OUTER	8/74	12	47	2.8	0.12	1130
							77 3290	OUTER	7/77	19	40	5.6	0.71	1110
							75 1150	OUTER	6/79	23	41	7.3	1.98	2000
								INNER	8/74	12	54	2.5	0.00	10

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 1	GREENUP	9- 45	0.0- 9.3	9.3	FAS-SP	7/72	75 980	OUTER	9/75	37	46	2.2	0.57	970
KY 1	GREENUP	9- 45	9.3- 17.3	8.0	FAS-SP	1/65	75 1325	OUTER	9/75	31	48	6.0	2.51	1280
KY 7	CARTER	9- 22	0.0- 5.2	5.2	FAP-SP	10/71	75 2023	OUTER	10/75	20	31	7.6	1.00	1380
KY 7	CARTER	9- 22	5.2- 10.1	4.9	FAP-SP	6/71	75 2990	OUTER	10/75	18	36	4.4	1.43	1820
KY 7	ELLIOTT	9- 32	0.0- 7.2	7.2	FAP-SP	6/65	75 1730	OUTER	10/75	28	41	3.2	2.27	1210
KY 7	MORGAN	10- 88	0.5- 11.7	11.2	FAP-SP	11/69	75 2136	OUTER	10/75	39	39	5.1	1.74	1620
KY 8	BRACKEN	6- 12	0.0- 7.7	7.7	FAP-SP	8/72	75 1390	OUTER	10/75	31	46	4.2	0.68	1160
KY 8	BRACKEN	6- 12	7.7- 12.6	4.9	FAP-SP	6/73	75 1530	OUTER	10/75	19	48	1.7	0.65	1530
KY 8	BRACKEN	6- 12	13.9- 19.0	5.1	FAP-SP	1/63	75 1040	OUTER	10/75	17	55	2.8	2.04	880
KY 8	CAMPBELL	6- 19	18.4- 25.9	7.5	FAP-SP	11/67	75 2010	OUTER	10/75	27	48	2.7	2.63	1820
KY 8	PENDLETON	6- 96	0.0- 4.3	4.3	FAP-SP	12/70	75 1750	OUTER	10/75	17	42	3.7	1.21	1360
KY 10	LEWIS	9- 68	9.9- 13.9	4.0	FAP-SP	12/71	75 1790	OUTER	9/75	16	44	1.1	0.87	1260
KY 10	LEWIS	9- 68	20.6- 29.6	9.0	FAP-SP	11/67	75 2520	OUTER	9/75	26	37	5.2	2.91	2030
KY 10	LEWIS	9- 68	29.6- 35.4	5.8	FAP-SP	9/66	75 2040	OUTER	9/75	23	42	5.0	2.78	1690
KY 10	MASON	9- 81	14.4- 22.4	8.0	FAP-SP	9/72	75 5268	OUTER	9/75	30	37	3.9	1.74	3140
KY 11	BATH	9- 6	0.0- 12.8	12.8	FAS-SS	12/73	75 1141	OUTER	10/75	50	43	4.9	0.38	1130
KY 11	FLEMING	9- 35	0.0- 11.0	11.0	FAP-SS	7/68	75 1600	OUTER	10/75	43	44	4.0	2.16	1620
KY 11	FLEMING	9- 35	12.0- 16.8	4.8	FAP-SP	8/70	75 4566	OUTER	10/75	19	42	4.5	4.35	4580
KY 11	LEE	10- 65	0.0- 4.2	4.2	FAP-SP	4/63	75 2175	OUTER	11/75	13	37	2.3	4.01	1750
KY 11	LEE	10- 65	5.1- 15.9	10.8	FAP-SP	2/70	75 1423	OUTER	11/75	41	32	2.7	1.32	1260
KY 11	OWSLEY	10- 95	12.2- 17.9	5.7	FAP-SP	3/63	75 1650	OUTER	11/75	21	36	3.1	3.00	1300
KY 15	BREATHITT	10- 13	0.0- 4.1	4.1	FAP-SP	2/68	75 3550	OUTER	10/75	16	37	2.2	3.00	2140
KY 15	BREATHITT	10- 13	8.0- 14.7	6.7	FAP-SP	2/68	75 5440	OUTER	10/75	27	45	3.3	5.27	3770
KY 15	BREATHITT	10- 13	18.4- 25.0	6.6	FAP-SP	8/63	75 3885	OUTER	10/75	27	34	4.3	5.74	2590
KY 15	PERRY	10- 97	0.0- 6.0	6.0	FAP-SP	7/72	75 4446	OUTER INNER	10/75 10/75	24 3	34 53	2.9 1.5	2.11 0.20	3550 330

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 21	MADISON	7- 76	0.0- 7.9	7.9	FAP-SP	3/73	75 960	OUTER	11/75	32	46	5.3	0.47	970
US 23	FLOYD	12- 36	10.1- 15.7	5.6	FAP-SP	12/73	75 9366	OUTER INNER	10/75 10/75	22 20	35 49	3.4 3.7	2.58 0.53	7780 1590
US 23	FLOYD	12- 36	17.6- 22.5	4.9	FAP-SP	9/73	75 10480	OUTER	10/75	20	35	3.1	3.94	10470
US 23	JOHNSON	12- 58	8.9- 18.4	9.5	FAP-SP	7/71	75 6570	OUTER	10/75	39	28	3.7	4.36	5670
US 23	LAWRENCE	12- 64	0.0- 5.5	5.5	FAP-SP	7/71	75 4795	OUTER	10/75	22	32	3.5	2.29	2980
US 23	LAWRENCE	12- 64	7.6- 16.8	9.2	FAP-SP	7/71	75 5640	OUTER	10/75	37	39	4.9	3.78	4920
US 23	PIKE	12- 98	21.3- 26.3	5.0	SP	7/74	75 4780	OUTER	10/75	20	26	2.5	1.07	4780
US 23	PIKE	12- 98	36.3- 43.7	7.4	FAP-SP	2/73	75 9033	OUTER INNER	10/75 10/75	28 29	34 47	3.0 4.0	3.65 0.71	7560 1470
US 25	BOONE	6- 8	1.5- 10.0	8.5	FAS-SS	10/72	75 6975	OUTER	10/75	32	44	4.2	3.81	6910
US 25	GRANT	6- 41	0.5- 10.7	10.2	FAS-SS	1/74	75 1210	OUTER	10/75	40	48	3.6	0.39	1200
US 25	GRANT	6- 41	15.7- 21.9	6.2	FAS-SS	5/74	75 1291	OUTER	10/75	25	50	2.6	0.34	1290
US 25	KENTON	6- 59	0.0- 4.8	4.8	FAS-SS	5/74	75 3090	OUTER	10/75	21	48	3.0	0.81	3070
US 25	MADISON	7- 76	5.8- 12.0	6.2	FAS-SS	5/64	75 4550	OUTER	9/75	24	37	2.8	11.33	5480
US 25	ROCKCASTLE	8-102	14.5- 20.8	6.3	FAS-SS	1/75	75 1130	OUTER	9/75	24	43	4.4	0.13	1090
US 25	SCOTT	7-105	4.7- 8.9	4.2	FAS-SS	11/72	75 1940	OUTER	10/75	17	52	4.7	1.28	2380
US 25E	BELL	11- 7	4.8- 9.5	4.7	FAP-SP	10/73	75 11750	OUTER INNER	8/75 8/75	18 16	32 40	2.8 3.6	3.10 0.77	9400 2350
US 25E	KNOX	11- 61	0.0- 5.4	5.4	FAP-SP	7/68	75 7565	OUTER	8/75	21	31	3.7	7.93	6150
US 25E	KNOX	11- 61	5.4- 10.2	4.8	FAP-SP	9/64	75 9030	OUTER	8/75	18	33	4.4	13.26	6670
US 25W	WHITLEY	11-118	6.4- 10.7	4.3	FAS-SS	8/72	75 3850	OUTER	8/75	18	28	4.0	2.24	4130
US 25W	WHITLEY	11-118	16.8- 22.0	5.2	FAS-SS	9/65	75 1350	OUTER	8/75	20	37	3.9	4.93	2730
US 25W	WHITLEY	11-118	22.2- 29.4	7.2	FAS-SP	10/63	75 2215	OUTER	8/75	28	36	2.1	7.51	3490

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	BOURBON	7- 9	0.0- 6.3	6.3	FAP-SP	3/63	75 8050	OUTER	10/75	25	45	3.6	13.73	5960
US 27	CAMPBELL	6- 19	5.2- 9.8	4.6	FAP-SP	5/65	75 8650	OUTER	10/75	17	43	2.8	10.67	5600
US 27	FAYETTE	7- 34	10.2- 15.8	5.6	FAP-SP	1/63	75 9640	OUTER	10/75	23	43	3.4	19.29	8270
US 27	GARRARD	7- 40	3.8- 15.1	11.3	FAP-SP	8/63	75 5692	OUTER	9/75	45	36	3.4	8.96	4070
US 27	HARRISON	6- 49	10.0- 15.5	5.5	FAP-SP	8/66	75 1573	OUTER	10/75	22	46	5.2	3.04	1810
US 27	HARRISON	6- 49	15.5- 19.5	4.0	FAP-SP	6/66	75 1280	OUTER	10/75	16	50	3.6	1.82	1070
US 27	JESSAMINE	7- 57	8.8- 13.1	4.3	FAP-SP	11/64	75 8570	OUTER	9/75	18	32	3.5	12.85	6510
US 27	LINCOLN	8- 69	18.0- 22.0	4.0	FAP-SP	9/72	75 5610	OUTER	9/75	16	48	2.8	3.22	5910
US 27	MC CREARY	8- 74	14.3- 20.4	6.1	FAP-SP	8/66	75 2530	OUTER	8/75	24	33	4.5	4.50	2750
US 27	PENDLETON	6- 96	0.0- 7.3	7.3	FAP-SP	6/66	75 2020	OUTER	10/75	29	44	3.8	2.91	1700
US 27	PENDLETON	6- 96	11.8- 16.9	5.1	FAP-SP	5/65	75 3560	OUTER	10/75	20	44	3.2	4.90	2570
KY 30	JACKSON	11- 55	12.5- 20.9	8.4	FAP-SP	10/72	75 426	OUTER	11/75	33	33	3.7	0.26	470
KY 30	OWSLEY	10- 95	0.0- 10.8	10.8	FAP-SP	1/73	75 550	OUTER	11/75	41	42	5.7	0.29	550
US 31E	ALLEN	3- 2	2.2- 7.5	5.3	SP	8/68	75 2640	OUTER	8/75	21	40	5.0	3.10	2420
US 31E	ALLEN	3- 2	13.6- 18.5	4.9	FAP-SP	11/74	75 1925	OUTER	8/75	19	42	2.9	0.28	1940
US 31E	BARREN	3- 5	0.0- 7.6	7.6	FAP-SP	10/64	75 1230	OUTER	8/75	30	39	4.7	3.85	1940
US 31E	BULLITT	5- 15	0.0- 5.5	5.5	FAP-SP	11/71	75 5730	OUTER	11/75	18	39	4.2	4.52	6180
US 31E	LARUE	4- 62	10.2- 20.7	10.5	FAP-SP	5/65	75 1820	OUTER	11/75	42	45	5.3	3.00	1560
US 31E	NELSON	4- 90	5.1- 9.1	4.0	FAP-SP	9/74	75 2570	OUTER	11/75	15	45	1.6	0.56	2580
US 31E	NELSON	4- 90	20.5- 26.4	5.9	FAP-SP	8/72	75 3020	OUTER	11/75	24	44	3.7	2.14	3600
US 31W	HART	4- 50	3.3- 9.6	6.3	FAS-SS	10/69	75 3483	OUTER	9/75	25	43	2.3	3.00	2770
US 31W	JEFFERSON	5- 56	0.0- 4.3	4.3	FAP-SP	5/73	75 14710	OUTER INNER	11/75 11/75	19 18	40 44	3.7 3.1	5.15 1.62	11210 3520
US 31W	JEFFERSON	5- 56	4.3- 11.3	7.0	SP	5/73	75 26525	OUTER INNER	11/75 11/75	16 20	35 36	3.3 4.4	7.83 4.37	17030 9500
US 31W	SIMPSON	3-107	7.6- 14.0	6.4	FAS-SS	7/73	75 4885	OUTER	8/75	25	38	2.8	1.89	4890
US 31W	WARREN	3-114	20.5- 28.1	7.6	FAS-SS	1/64	75 3490	OUTER	9/75	29	28	2.8	11.52	5400

CLASS 1, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR ADT	LAKE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 32	FLEMING	9- 35	12.7- 25.1	12.4	FAS-SP	7/65	75	2042	OUTER	10/75	49	3.71	1980
KY 32	FLEMING	9- 35	25.1- 29.5	4.4	FAS-SP	10/67	75	1600	OUTER	10/75	18	2.16	1970
KY 32	ROHAN	9-103	0.0- 3.4	3.4	FAP-SP	8/69	75	3350	OUTER	10/75	21	3.25	2878
KY 40	JOHNSON	12- 58	1.4- 12.8	11.4	FAP-SP	1/64	75	3425	OUTER	10/75	35	4.50	2100
KY 40	MARTIN	12- 80	0.0- 4.9	4.9	FAP-SP	10/66	75	1645	OUTER	10/75	19	2.26	1380
KY 40	MARTIN	12- 80	4.9- 10.3	5.4	FAP-SP	1/64	75	1642	OUTER	10/75	19	2.77	1290
KY 40	MARTIN	12- 80	10.7- 26.3	9.6	FAP-SP	10/70	75	4680	OUTER	10/75	39	3.17	3480
US 41	CHRISTIAN	2- 24	15.3- 25.5	10.2	FAS-SS	7/66	75	2600	OUTER	6/75	41	3.57	3410
US 41A	CHRISTIAN	2- 24	0.0- 4.1	4.1	FAP-SP	9/74	75	1885	OUTER	6/75	17	1.85	1350
US 41	CHRISTIAN	2- 24	27.0- 31.6	4.6	FAS-SS	12/64	75	2070	OUTER	6/75	18	8.07	4200
US 41	TODD	3-110	1.5- 8.4	6.9	FAP-SS	7/73	75	3110	OUTER	8/75	27	1.19	3120
US 41A	CHRISTIAN	2- 24	0.0- 4.1	4.1	FAP-SP	9/74	75	1885	INNER	6/75	16	0.74	5430
US 41A	CHRISTIAN	2- 24	4.7- 14.2	9.5	FAP-SP	10/75	75	11560	OUTER INNER	6/75 6/75	36 35	2.83 6.69	9280 2280
US 41A	HENDERSON	2- 51	0.0- 13.2	13.2	FAS-SS	8/67	75	2045	OUTER	6/75	51	3.61	2520
US 41A	HOPKINS	2- 54	18.2- 24.6	6.4	FAP-SS	8/73	75	6150	OUTER	6/75	24	2.09	6140
US 41A	HOPKINS	2- 54	25.1- 29.4	4.3	FAP-SS	11/72	75	3300	OUTER	6/75	17	1.23	2570
US 41A	WEBSTER	2-117	0.0- 9.7	9.7	FAS-SS	10/70	75	2530	OUTER	6/75	39	1.89	2210
US 41A	WEBSTER	2-117	10.3- 19.7	9.4	FAS-SS	8/73	75	2263	OUTER	6/75	38	0.77	2270
US 42	BOONE	6- 8	2.2- 14.0	11.8	FAS-SS	10/70	75	3944	OUTER	11/75	47	3.00	3250
US 42	CARROLL	6- 21	0.0- 4.5	4.5	FAS-SP	7/67	75	1110	OUTER	11/75	18	1.23	810
US 42	GALLATIN	6- 39	11.9- 17.0	5.1	FAS-SP	10/69	75	1510	OUTER	11/75	20	1.38	1250
US 42	OLDHAM	3- 93	3.6- 19.4	15.8	FAS-SP	12/67	75	987	OUTER	11/75	64	1.25	870
US 45	GRAVES	1- 42	0.7- 7.2	6.5	FAS-SS	6/73	75	1805	OUTER	6/75	26	0.63	1810
US 45	GRAVES	1- 42	7.6- 15.9	8.3	FAS-SS	6/73	75	2805	OUTER	6/75	32	1.01	2820

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 51	CARLISLE	1- 20	1.8- 6.8	5.3	FAP-SP	12/66	75 4215	OUTER	6/75	19	47	2.2	5.14	3330
US 51	CARLISLE	1- 20	8.2- 12.5	4.3	FAP-SP	6/74	75 4220	OUTER	6/75	18	46	1.4	0.74	4210
US 51	FULTON	1- 38	1.4- 6.6	5.2	FAP-SP	10/72	75 3430	OUTER	6/75	20	45	2.5	1.37	2850
US 51	HICKMAN	1- 53	0.0- 6.3	6.3	FAP-SP	9/74	75 4650	OUTER	6/75	26	42	2.9	0.61	4660
US 51	HICKMAN	1- 53	7.4- 13.3	5.9	FAP-SP	10/66	75 3490	OUTER	6/75	23	46	2.9	4.77	3030
KY 55	ADAIR	8- 1	12.5- 19.7	7.2	FAP-SP	11/74	75 3000	OUTER	11/75	23	48	1.8	0.55	3020
KY 58	GRAVES	1- 42	8.2- 14.9	6.7	FAP-SP	10/66	75 2520	OUTER	6/75	27	36	3.3	3.75	2380
US 60	BALLARD	1- 4	0.5- 6.1	5.6	FAP-SP	4/63	75 3980	OUTER	6/75	23	44	2.6	6.37	2880
US 60	BALLARD	1- 4	7.1- 17.0	9.9	FAP-SP	9/73	75 4140	OUTER	6/75	38	40	4.3	1.30	4140
US 60	BATH	9- 6	0.0- 6.4	6.4	FAS-SS	11/64	75 6930	OUTER	10/75	25	44	5.3	11.18	5590
US 60	BOYD	9- 10	4.3- 9.9	5.6	FAP-SP	3/72	75 13180	OUTER INNER	9/75 9/75	24 23	47 54	4.4 1.9	5.67 1.33	8770 2050
US 60	BRECKINRIDGE	4- 14	3.2- 14.1	10.9	FAP-SP	12/72	75 3213	OUTER	9/75	43	44	4.7	1.62	3230
US 60	BRECKINRIDGE	4- 14	18.3- 29.6	11.3	FAP-SP	6/65	75 3793	OUTER	9/75	46	44	4.1	5.52	2950
US 60	CARTER	9- 22	0.0- 6.2	6.2	FAS-SS	8/69	75 2255	OUTER	10/75	25	39	3.2	2.48	2190
US 60	CARTER	9- 22	26.9- 34.9	8.0	FAS-SS	9/63	75 2873	OUTER	10/75	32	40	4.7	12.75	5800
US 60	CLARK	7- 25	0.0- 4.7	4.7	FAP-SP	10/73	75 5630	OUTER	10/75	18	40	3.2	2.09	5620
US 60	CRITTENDEN	1- 28	0.0- 8.8	8.8	FAP-SP	1/68	75 3970	OUTER	6/75	31	33	2.3	4.82	3560
US 60	CRITTENDEN	1- 28	10.7- 17.3	6.6	FAP-SP	1/75	75 2530	OUTER	6/75	27	41	2.9	0.21	2580
US 60	CRITTENDEN	1- 28	17.3- 23.1	5.8	FAP-SP	11/74	75 1750	OUTER	6/75	22	41	3.3	0.19	1750
US 60	DAVIESS	2- 30	0.0- 9.7	9.7	FAS-SS	7/67	75 3620	OUTER	7/75	36	43	6.8	4.90	3340
US 60	DAVIESS	2- 30	17.3- 22.9	5.6	FAP-SP	9/66	75 10040	OUTER	9/75	22	36	2.4	9.70	5900
US 60	FAYETTE	7- 34	0.4- 4.7	4.7	FAP-SP	10/65	75 23570	OUTER INNER	10/75 10/75	17 16	37 47	3.3 3.2	27.88 13.37	15210 7300
US 60	FAYETTE	7- 34	12.9- 19.1	6.7	FAS-SP	10/73	75 5290	OUTER	10/75	27	47	2.7	1.96	5280

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 60	HANCOCK	2- 46	2.3- 9.9	7.6	FAP-SP	11/72	75 3880	OUTER	9/75	30	39	3.2	2.10	4070
US 60	HANCOCK	2- 46	11.5- 18.5	7.0	FAP-SP	11/72	75 2250	OUTER	9/75	28	41	3.9	1.22	2360
US 60	HENDERSON	2- 51	3.6- 10.4	6.8	FAP-SP	9/72	75 6910	OUTER	6/75	26	40	4.8	3.59	7090
US 60	HENDERSON	2- 51	11.5- 25.5	14.0	FAS-SS	6/67	75 4200	OUTER	7/75	55	33	6.4	6.49	4380
US 60	JEFFERSON	5- 56	0.0- 4.1	4.1	SP	5/73	75 59480	OUTER INNER	11/75 11/75	11 14	33 40	4.0 4.2	15.62 11.71	34000 25490
US 60	LIVINGSTON	1- 70	4.9- 11.0	6.1	FAP-SP	9/72	75 2950	OUTER	6/75	25	40	1.8	1.50	2980
US 60	LIVINGSTON	1- 70	12.7- 17.2	4.5	FAP-SP	8/68	75 2605	OUTER	6/75	18	39	1.6	2.94	2350
US 60	LIVINGSTON	1- 70	17.2- 27.3	10.1	FAP-SP	8/68	75 2205	OUTER	6/75	41	37	3.7	2.88	2310
US 60	MC CRACKEN	1- 73	0.0- 11.2	11.2	FAP-SP	11/63	75 7733	OUTER	6/75	42	41	2.8	10.90	5170
US 60	MONTGOMERY	7- 87	0.0- 4.4	4.4	FAS-SS	10/73	75 2905	OUTER	10/75	17	49	4.0	1.08	2890
US 60	ROWAN	9-103	0.0- 7.2	7.2	FAS-SS	9/66	75 3670	OUTER	10/75	30	40	3.1	5.77	3460
US 60	SHELBY	5-106	3.2- 9.0	5.8	FAS-SP	6/74	75 7935	OUTER	11/75	23	42	3.8	2.02	7940
US 60	SHELBY	5-106	11.2- 23.0	11.8	FAS-SP	9/72	75 4800	OUTER	11/75	48	36	4.4	2.61	4550
US 60	UNION	2-113	6.7- 11.8	5.1	FAP-SP	10/68	75 4290	OUTER	6/75	19	34	2.9	4.78	3910
US 60	UNION	2-113	17.2- 21.9	4.7	FAP-SP	6/73	75 5295	OUTER	6/75	17	32	3.6	1.80	4870
US 60	WOODFORD	7-120	9.4- 13.0	3.6	FAP-SP	10/65	75 16845	OUTER INNER	10/75 10/75	14 13	40 51	2.7 4.3	21.84 7.65	11920 4170
KY 61	ADAIR	8- 1	0.0- 12.9	12.9	FAS-SP	10/70	75 2315	OUTER	11/75	51	49	3.3	1.68	1810
KY 61	ADAIR	8- 1	16.4- 24.0	7.6	FAP-SP	8/68	75 2620	OUTER	11/75	30	51	3.1	2.69	2030
KY 61	CUMBERLAND	8- 29	14.8- 27.2	12.4	FAS-SP	10/70	75 846	OUTER	11/75	49	48	3.3	0.74	800
KY 61	GREEN	4- 44	0.0- 4.7	4.7	FAP-SP	9/69	75 2000	OUTER	11/75	16	41	3.6	2.14	1910
KY 61	GREEN	4- 44	10.1- 15.1	5.0	FAP-SP	8/75	75 3130	OUTER	11/75	20	37	2.8	0.14	3160
US 62	ANDERSON	7- 3	3.1- 18.3	15.2	FAS-SS	11/72	75 1015	OUTER	11/75	61	50	3.3	0.61	1120
US 62	CARLISLE	1- 20	0.3- 6.2	5.9	FAS-SS	7/63	75 1725	OUTER	6/75	24	46	2.2	2.63	1210
US 62	CARLISLE	1- 20	6.2- 13.1	6.9	FAS-SS	8/72	75 1810	OUTER	6/75	27	47	3.2	0.90	1760

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 62	HARDIN	4- 47	11.4- 15.8	4.4	FAS-SS	11/71	75 7480	OUTER	9/75	17	50	2.8	4.29	6120
US 62	HARRISON	6- 49	0.0- 5.8	5.8	FAS-SS	7/71	75 1040	OUTER	10/75	23	44	3.4	0.73	930
US 62	HARRISON	6- 49	9.7- 15.2	5.5	FAS-SS	8/75	75 1730	OUTER	10/75	21	44	3.4	0.07	1840
US 62	LYON	1- 72	4.1- 9.5	5.4	FAP-SP	4/63	75 9250	OUTER INNER	6/75 6/75	18 15	41 50	3.0 2.3	12.63 1.92	5680 860
US 62	MC CRACKEN	1- 73	3.3- 12.5	9.2	FAS-SS	10/72	75 5325	OUTER	6/75	36	41	4.5	2.20	4590
US 62	MASON	9- 81	3.5- 10.0	6.5	FAS-RS	11/70	75 616	OUTER	10/75	26	44	6.2	0.58	640
US 62	MUHLENBERG	2- 89	0.0- 4.2	4.2	FAS-SS	8/73	75 2800	OUTER	7/75	17	35	3.5	0.55	1540
US 62	NELSON	4- 90	0.0- 13.0	13.0	FAS-SS	10/69	75 3640	OUTER	11/75	44	51	3.3	3.03	2740
US 62	NELSON	4- 90	27.3- 37.1	9.8	FAS-SS	9/63	75 1085	OUTER	11/75	37	46	5.8	1.75	790
US 62	OHIO	2- 92	2.2- 9.2	7.0	FAS-SS	11/74	75 2330	OUTER	7/75	28	31	4.1	0.30	2370
US 62	ROBERTSON	6-101	0.0- 10.0	10.0	FAS-SS	10/73	75 763	OUTER	10/75	38	50	3.7	0.29	770
US 62	ROBERTSON	6-101	11.0- 15.4	4.4	FAS-SS	10/74	75 905	OUTER	10/75	16	49	3.3	0.17	930
US 62	WOODFORD	7-120	0.2- 5.6	5.4	FAS-SS	8/73	75 2840	OUTER	11/75	22	45	3.0	1.16	2830
US 62	WOODFORD	7-120	7.1- 13.0	5.9	FAS-SS	12/74	75 2140	OUTER	10/75	25	48	2.3	0.34	2140
US 68	BARREN	3- 5	0.0- 7.0	7.0	FAS-SP	11/66	75 1600	OUTER	8/75	28	43	2.9	3.88	2420
US 68	BARREN	3- 5	7.0- 11.0	4.0	FAS-SP	11/66	75 2700	OUTER	8/75	16	36	3.3	5.36	3350
US 68	BOURBON	7- 9	2.7- 9.9	7.2	FAP-SP	11/64	75 4700	OUTER	10/75	29	43	2.6	8.24	4120
US 68	BOYLE	7- 11	0.0- 6.9	6.9	FAS-SS	9/67	75 745	OUTER	11/75	23	44	6.0	1.11	740
US 68	GREEN	4- 44	0.0- 11.9	11.9	FAS-SS	9/66	75 3308	OUTER	11/75	45	43	5.1	3.61	2160
US 68	GREEN	4- 44	13.9- 18.5	4.6	FAS-SS	1/73	75 3445	OUTER	11/75	19	38	4.5	1.78	3440
US 68	JESSAMINE	7- 57	0.0- 12.0	12.0	FAP-SP	11/67	75 3005	OUTER	11/75	46	43	2.5	4.90	3360
US 68	LOGAN	3- 71	11.6- 16.1	4.5	FAP-SP	3/65	75 4950	OUTER	8/75	18	38	2.5	8.13	4260
US 68	LOGAN	3- 71	16.1- 20.4	4.3	FAP-SP	1/63	75 4520	OUTER	8/75	17	38	6.3	8.00	3480
US 68	LOGAN	3- 71	22.4- 26.6	4.2	FAP-SP	1/63	75 4520	OUTER	8/75	17	35	3.0	7.73	3360

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 68	MARSHALL	1- 79	0.0- 9.3	9.3	FAP-SP	2/64	75 4760	OUTER	6/75	37	41	3.9	8.67	4200
US 68	MERCER	7- 84	0.0- 5.9	5.9	FAS-SS	9/67	75 2250	OUTER	11/75	23	44	4.0	2.51	1690
US 68	MERCER	7- 84	8.2- 20.2	12.0	FAP-SP	2/63	75 1746	OUTER	11/75	46	40	5.9	4.04	1740
US 68	METCALF	3- 85	9.0- 15.7	6.7	FAS-SS	9/66	75 1810	OUTER	11/75	26	40	3.9	2.19	1310
US 68	METCALF	3- 85	15.7- 20.1	4.4	FAS-SS	9/66	75 800	OUTER	11/75	17	42	4.8	1.19	710
US 68	NICHOLAS	9- 91	2.7- 7.6	4.9	FAP-SP	6/67	75 2395	OUTER	10/75	20	41	3.4	2.66	1740
US 68	TAYLOR	4-109	0.0- 4.5	4.5	FAS-SS	9/74	75 3835	OUTER	11/75	17	39	2.1	0.81	3850
US 68	TODD	3-110	0.0- 8.3	8.3	FAP-SP	10/66	75 3800	OUTER	8/75	33	35	3.5	4.67	2890
US 68	TRIGG	1-111	0.4- 6.3	5.9	FAP-SP	1/65	75 3920	OUTER	6/75	24	29	3.5	6.28	3300
US 68	TRIGG	1-111	11.2- 17.7	6.5	FAP-SP	1/65	75 5380	OUTER	6/75	26	29	3.3	7.85	4130
KY 79	BRECKINRIDGE	4- 14	5.3- 15.0	9.7	FAP-SS	6/68	75 2446	OUTER	9/75	38	38	2.9	2.16	1630
KY 79	BUTLER	3- 16	12.5- 24.1	11.6	FAS-SS	12/69	75 1575	OUTER	9/75	47	46	3.4	1.62	1540
KY 79	GRAYSON	4- 43	5.4- 12.4	7.0	FAS-SS	6/66	75 735	OUTER	9/75	29	35	5.4	1.01	600
KY 79	GRAYSON	4- 43	12.4- 18.3	5.9	FAS-SS	7/73	75 620	OUTER	9/75	24	40	2.4	0.24	610
KY 79	LOGAN	3- 71	4.1- 15.1	11.0	FAS-SS	10/74	75 1140	OUTER	8/75	43	46	2.0	0.18	1140
KY 80	ADAIR	8- 1	12.8- 22.1	9.3	FAS-SS	10/66	75 2305	OUTER	8/75	37	53	4.4	4.08	2520
KY 80	CASEY	8- 23	0.0- 5.1	5.1	FAS-SS	11/66	75 1536	OUTER	8/75	21	39	2.6	3.18	1990
KY 80	CLAY	11- 26	0.0- 7.0	7.0	FAS-SS	9/65	75 2220	OUTER	10/75	26	31	6.3	4.70	2550
KY 80	FLOYD	12- 36	0.4- 9.3	8.9	FAP-SP	12/73	75 3636	OUTER	10/75	37	36	3.9	1.20	3630
KY 80	GRAVES	1- 42	1.5- 9.6	8.1	FAS-SP	7/67	75 2200	OUTER	6/75	32	45	5.3	2.41	1670
KY 80	KNOTT	12- 60	0.0- 11.2	11.2	FAP-SP	6/73	75 2960	OUTER	10/75	42	36	3.2	1.25	2970
KY 80	KNOTT	12- 60	12.9- 23.9	11.0	FAP-SP	10/63	75 2980	OUTER	10/75	44	44	3.5	4.14	1890
KY 80	LAUREL	11- 63	13.0- 26.0	13.0	FAS-SS	9/63	75 1922	OUTER	10/75	50	36	4.8	4.73	2150
KY 80	LESLIE	11- 66	0.0- 5.1	5.1	FAS-SS	11/66	75 3026	OUTER	10/75	14	36	3.1	3.89	2390

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 80	MARSHALL	1- 79	0.0- 9.1	9.1	FAP-SP	10/66	75 1640	OUTER	6/75	36	39	4.5	2.55	1620
KY 80	MARSHALL	1- 79	9.1- 16.9	7.8	FAP-SP	10/66	75 1705	OUTER	6/75	37	37	3.3	2.27	1440
KY 80	PULASKI	8-100	0.0- 10.9	10.9	FAS-SS	11/66	75 2773	OUTER	8/75	44	35	3.0	4.94	3080
KY 80	PULASKI	8-100	10.9- 16.2	5.3	FAS-SS	10/66	75 5955	OUTER	8/75	21	33	2.8	9.87	6100
KY 80	PULASKI	8-100	21.8- 28.3	6.5	FAP-SP	8/75	73 4520	OUTER	8/75	24	40	9.3	0.0	4520
KY 80	RUSSELL	8-104	4.2- 10.6	6.4	FAS-SS	10/66	75 2787	OUTER	8/75	25	53	4.6	5.07	3140
KY 90	BARREN	3- 5	0.8- 9.3	8.5	FAP-SP	9/69	75 4260	OUTER	8/75	37	38	3.8	4.89	4510
KY 90	MC CREARY	8- 74	0.0- 12.0	12.0	FAP-SP	12/69	75 897	OUTER	8/75	45	38	5.4	0.84	820
KY 90	METCALF	3- 85	0.0- 11.7	11.7	FAP-SP	11/70	75 1935	OUTER	8/75	47	38	4.8	1.57	1800
KY 90	WAYNE	8-116	21.0- 26.7	5.7	FAP-SP	3/70	75 3500	OUTER	8/75	22	48	2.1	3.26	3280
KY 90	WHITLEY	11-118	0.0- 8.3	8.3	FAP-SP	10/73	75 930	OUTER	8/75	29	38	3.5	0.31	940
KY 114	FLOYD	12- 36	0.0- 9.3	9.3	FAP-SP	11/65	75 3600	OUTER	10/75	37	42	2.5	3.81	2110
US 119	BELL	11- 7	8.0- 12.2	4.2	FAP-SP	2/64	75 3830	OUTER	8/75	16	35	2.1	5.73	2740
US 119	HARLAN	11- 48	13.1- 33.9	20.8	FAP-SP	4/63	75 3163	OUTER	10/75	82	32	4.6	5.05	2210
US 127	CLINTON	8- 27	12.4- 21.7	9.3	FAP-SP	8/69	75 1130	OUTER	11/75	34	48	1.5	1.31	1150
US 127	FRANKLIN	5- 37	8.5- 19.5	11.0	FAS-SS	7/66	75 2806	OUTER	11/75	42	35	5.1	3.91	2300
US 127	LINCOLN	8- 69	4.3- 11.6	7.3	FAP-SP	8/69	75 4120	OUTER	11/75	29	40	3.2	3.64	3200
US 127	OWEN	6- 94	0.0- 5.4	5.4	FAS-SS	6/65	75 1420	OUTER	11/75	22	42	3.6	2.05	1080
US 127	OWEN	6- 94	5.4- 15.5	10.1	FAS-SS	4/65	75 1157	OUTER	11/75	39	40	6.0	1.86	960
US 127	OWEN	6- 94	24.7- 30.1	5.4	FAS-SS	9/66	75 940	OUTER	11/75	19	49	3.0	0.96	580
US 150	BOYLE	7- 11	0.0- 4.0	4.0	FAP-SP	8/66	75 1460	OUTER	11/75	16	40	4.6	2.34	1390
US 150	BOYLE	7- 11	5.1- 13.2	8.1	FAS-SP	5/65	75 4710	OUTER	11/75	30	39	2.7	8.35	4350
US 150	LINCOLN	8- 69	0.0- 4.3	4.3	FAP-SP	9/72	75 5510	OUTER INNER	11/75 11/75	17 17	41 54	2.9 1.3	3.00 0.40	5170 680

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 150	NELSON	4- 90	2.3- 7.6	5.3	FAP-SP	10/70	75 3960	OUTER	11/75	21	45	3.8	3.01	3240
US 150	WASHINGTON	4-115	0.0- 8.2	8.2	FAP-SP	7/73	75 3496	OUTER	11/75	33	37	3.5	1.50	3490
US 150	WASHINGTON	4-115	9.9- 21.4	11.5	FAP-SP	5/66	75 1687	OUTER	11/75	47	26	5.7	3.05	1750
KY 191	WOLFE	10-119	0.6- 4.9	4.3	FAP-SP	12/66	75 1185	OUTER	10/75	16	40	3.7	2.00	1240
KY 191	WOLFE	10-119	4.9- 10.3	5.4	FAP-SP	9/63	75 890	OUTER	10/75	19	38	5.9	2.11	960
US 231	ALLEN	3- 2	0.9- 10.4	9.5	FAP-SP	9/66	75 2650	OUTER	8/75	39	43	3.8	3.32	2030
US 231	DAVIESS	2- 30	1.3- 7.7	6.4	FAS-SS	10/65	75 3600	OUTER	8/75	25	40	3.3	7.01	3900
US 231	OHIO	2- 92	2.2- 6.5	4.3	FAS-SS	7/66	75 2850	OUTER	8/75	18	31	3.7	3.80	2290
US 231	OHIO	2- 92	13.4- 24.3	10.9	FAS-SS	5/67	75 3020	OUTER	8/75	42	42	3.6	5.16	3430
US 231	WARREN	3-114	3.4- 8.7	5.3	FAP-SP	6/68	75 4380	OUTER	8/75	22	42	2.0	4.04	3080
US 231	WARREN	3-114	15.6- 26.6	11.0	FAS-SS	6/66	75 2020	OUTER	8/75	44	39	3.3	4.33	2580
KY 259	BRECKINRIDGE	4- 14	2.5- 7.5	5.0	FAP-SP	10/73	75 1820	OUTER	9/75	21	45	3.2	0.64	1830
KY 259	GRAYSON	4- 43	6.1- 12.1	6.0	FAP-SP	8/68	75 4235	OUTER	9/75	24	40	4.9	3.90	3020
US 431	DAVIESS	2- 30	2.5- 7.2	4.7	FAP-SP	1/67	75 5090	OUTER	7/75	19	40	4.2	6.94	4450
US 431	LOGAN	3- 71	1.8- 7.3	5.5	FAP-SP	12/70	75 2310	OUTER	7/75	21	36	2.6	1.99	2360
US 431	LOGAN	3- 71	7.3- 14.0	6.7	FAP-SP	1/70	75 2790	OUTER	7/75	23	36	4.5	2.82	2800
US 431	LOGAN	3- 71	15.3- 31.9	16.6	FAP-SP	6/66	75 3063	OUTER	7/75	65	38	4.7	4.61	2770
US 431	MUHLENBERG	2- 89	0.0- 10.9	10.9	FAP-SP	10/69	75 1390	OUTER	7/75	41	41	4.3	1.50	1420
US 431	MUHLENBERG	2- 89	22.4- 27.8	5.4	FAP-SP	11/74	75 2450	OUTER	7/75	21	37	2.6	0.31	2440
US 460	BOURBON	7- 9	0.0- 7.7	7.7	FAP-SS	7/67	75 1530	OUTER	10/75	29	44	3.2	1.94	1280
US 460	FRANKLIN	5- 37	1.3- 6.1	4.8	FAP-SS	7/73	75 1805	OUTER	10/75	19	45	4.2	0.75	1800
US 460	JOHNSON	12- 58	0.0- 7.2	7.2	FAS-SP	10/66	75 2810	OUTER	10/75	28	42	2.6	3.42	2090
US 460	MAGOFFIN	10- 77	0.0- 10.9	10.9	FAP-SP	3/67	75 2075	OUTER	10/75	42	37	4.3	2.54	1630
US 460	MAGOFFIN	10- 77	11.6- 18.2	6.6	FAS-SP	10/66	75 2565	OUTER	10/75	23	42	3.1	3.65	2230

CLASS I, TYPE A AND TYPE A (MODIFIED), BITUMINOUS SURFACE - OTHER (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 460	MENIFEE	10- 83	0.0- 8.4	8.4	FAP-SP	1/73	75 1990	OUTER	10/75	34	40	5.0	1.01	1990
US 460	MENIFEE	10- 83	9.0- 19.8	10.8	FAP-SP	1/64	75 1583	OUTER	10/75	42	37	4.9	2.93	1360
US 460	MONTGOMERY	7- 87	0.0- 7.3	7.3	FAP-SP	7/67	75 1260	OUTER	10/75	29	41	4.4	1.27	840
US 460	MONTGOMERY	7- 87	10.1- 22.2	12.1	FAP-SP	10/70	75 2700	OUTER	10/75	49	32	2.8	3.15	3430
US 460	MORGAN	10- 88	0.0- 14.0	14.0	FAP-SP	12/74	75 830	OUTER	10/75	57	36	6.1	0.13	830
US 460	MORGAN	10- 88	18.4- 23.1	4.7	FAP-SP	3/67	75 2375	OUTER	10/75	16	39	3.6	3.87	2470
US 460	MORGAN	10- 88	23.2- 28.7	5.5	FAP-SP	3/67	75 1380	OUTER	10/75	23	38	4.1	1.43	910
US 460	SCOTT	7-105	0.0- 8.6	8.6	SS	1/70	75 2546	OUTER	10/75	34	43	4.2	2.51	2370
KY 555	WASHINGTON	4-115	8.8- 14.8	6.0	FAP-SP	11/69	75 585	OUTER	11/75	24	49	2.8	0.58	530
US 641	CALLOWAY	1- 18	0.5- 6.4	5.9	FAP-SP	11/72	75 4300	OUTER	6/75	23	34	2.7	1.78	3830
US 641	CRITTENDEN	1- 28	3.2- 7.2	4.0	FAP-SP	10/63	75 3220	OUTER	6/75	15	32	3.6	6.23	2920
US 641	LYON	1- 72	0.3- 5.7	5.4	FAP-SP	10/63	75 1770	OUTER	6/75	21	41	3.6	2.82	1320

PORTLAND CEMENT CONCRETE SURFACE - INTERSTATE

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9024	CHRISTIAN	2- 24	85.6- 93.3	7.7	INTER	10/75	75 1600	OUTER	10/77	57	46	2.4	0.56	1560
							77 4920	OUTER	10/79	59	48	2.1	2.58	3500
							75 1600	INNER	10/77	29	47	1.7	0.03	80
							77 4920	INNER	10/79	29	55	1.6	0.27	400
I 9064	JEFFERSON	5- 56	0.0- 0.9	0.9	INTER	9/61	77 26000	OUTER	7/79	15	31	3.5	16.11	5000
								MIDDLE	7/79	11	34	3.4	10.86	3300
								INNER	7/79	11	39	8.1	21.99	6800
I 9064	JEFFERSON	5- 56	0.9- 2.0	1.1	INTER	4/69	77 26000	OUTER	7/79	9	33	2.9	11.41	6100
								MIDDLE	7/79	5	34	3.5	11.79	6300
								INNER	7/79	4	38	4.8	18.15	9700
I 9064	JEFFERSON	5- 56	2.0- 2.3	0.3	INTER	10/70	77 16000	OUTER	7/79	2	32	0.0	7.12	4500
I 9064	JEFFERSON	5- 56	2.3- 3.1	0.8	INTER	7/71	77 17890	OUTER	7/79	6	31	1.6	6.71	4600
							75 13680	MIDDLE	8/77	7	35	5.1	7.35	6650
							77 17890	MIDDLE	7/79	3	35	0.4	4.75	3300
							75 13680	INNER	8/77	6	47	2.3	3.06	2770
							77 17890	INNER	7/79	4	35	1.9	10.45	7200
I 9064	JEFFERSON	5- 56	4.0- 4.5	0.5	INTER	12/76	75 13680	OUTER	8/77	5	33	2.1	0.81	6970
I 9064	JEFFERSON	5- 56	3.1- 3.5	0.4	INTER	12/76	77 31120	OUTER	7/79	4	31	2.2	3.54	7600
I 9064	JEFFERSON	5- 56	4.0- 4.5	0.5	INTER	12/76	75 13680	MIDDLE	8/77	5	39	6.4	0.52	4510
I 9064	JEFFERSON	5- 56	3.1- 3.5	0.4	INTER	12/76	77 31120	MIDDLE	7/79	1	23	0.0	5.34	11400
								INNER	7/79	2	40	0.0	5.65	12000
I 9064	JEFFERSON	5- 56	3.5- 4.0	0.5	INTER	12/76	77 31120	OUTER	7/79	4	31	1.1	3.54	7600
								MIDDLE	7/79	3	31	0.1	5.34	11400
								INNER	7/79	2	39	0.0	5.65	12000
I 9064	JEFFERSON	5- 56	4.0- 4.5	0.5	INTER	12/76	77 42560	OUTER	7/79	4	33	2.1	4.17	8900
								MIDDLE	7/79	1	25	0.0	8.27	17600
								INNER	7/79	2	32	0.0	7.35	15700
I 9064	JEFFERSON	5- 56	4.9- 6.4	1.5	INTER	9/70	77 42560	OUTER	7/79	12	35	2.5	16.00	9900
I 9064	JEFFERSON	5- 56	6.4- 7.8	1.4	INTER	9/68	75 32500	OUTER	8/77	12	36	4.6	24.86	15330
							77 46680	OUTER	7/79	11	35	1.1	34.64	17500
							75 32500	INNER	8/77	10	40	2.4	15.60	9620
							77 46680	INNER	7/79	6	38	1.6	23.81	12100

PORTLAND CEMENT CONCRETE SURFACE - INTERSTATE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9064	JEFFERSON	5- 56	7.8- 9.5	1.7	INTER	8/70	75 37280	OUTER	8/77	15	32	2.5	25.24	19840
							77 47000	OUTER	7/79	14	29	2.5	34.89	21500
							75 37280	INNER	8/77	13	36	3.7	17.38	13660
							77 47000	INNER	7/79	6	31	0.5	25.37	15600
I 9064	JEFFERSON	5- 56	9.5- 12.1	2.6	INTER	12/69	75 37280	OUTER	10/74	10	40	2.6	14.10	16110
								OUTER	8/77	21	36	2.1	25.24	18110
							77 44220	OUTER	7/79	20	33	2.5	34.25	19600
							75 37280	INNER	10/74	9	44	1.4	9.19	10500
I 9064	JEFFERSON	5- 56	12.1- 18.6	6.5	INTER	11/64	75 22000	OUTER	10/74	23	41	3.2	20.21	11210
								INNER	10/74	26	48	3.1	11.52	6390
							75 37280	OUTER	9/77	31	36	3.2	29.21	12450
							77 40090	OUTER	7/79	24	32	2.6	36.71	13800
I 9064	JEFFERSON	5- 56	14.9- 18.6	3.7	INTER	11/64	75 22000	OUTER	9/77	30	41	2.1	28.35	12090
							77 22820	OUTER	7/79	29	35	2.0	33.39	12500
							75 15190	OUTER	10/74	3	45	0.3	20.83	8860
								OUTER	9/77	5	41	1.5	27.07	9360
I 9064	JEFFERSON	5- 56	18.6- 19.3	0.7	INTER	11/61	75 15190	OUTER	10/74	3	45	0.3	20.83	8860
								OUTER	9/77	5	41	1.5	27.07	9360
							77 22820	OUTER	7/79	6	36	0.8	32.57	10100
								OUTER	7/79	6	36	0.8	32.57	10100
I 9064	JEFFERSON -SHELBY	5- 56 5-106	19.3- 25.3	6.0	INTER	12/61	75 15190	OUTER	10/74	25	42	3.0	20.83	8920
								OUTER	9/77	48	42	2.7	27.07	9400
							77 22090	OUTER	7/79	47	37	3.3	32.42	10100
							75 15190	INNER	10/74	25	50	2.6	8.93	3830
I 9064	SHELBY	5-106	25.3- 31.8	6.5	INTER	12/61	75 14800	OUTER	10/74	23	40	3.2	19.73	8450
								OUTER	9/77	52	41	3.0	25.85	8980
							77 19450	OUTER	7/79	53	36	3.3	30.64	9600
							75 14800	INNER	10/74	24	49	2.1	7.63	3270
I 9064	SHELBY	5-106	31.8- 38.1	6.3	INTER	6/62	75 14070	OUTER	10/74	25	42	3.9	21.09	9400
								OUTER	9/77	50	42	1.7	26.97	9680
							77 16930	OUTER	7/79	50	38	2.6	31.22	10000
							75 14070	INNER	10/74	23	54	3.0	8.39	3740
I 9064	SHELBY	5-106	38.1- 43.3	5.2	INTER	12/61	75 14500	OUTER	10/74	19	41	3.5	19.17	8210
								OUTER	9/77	43	39	3.1	25.18	8750
							77 16290	OUTER	7/79	42	33	3.2	29.25	9100
							75 14500	INNER	10/74	20	52	3.0	6.39	2740
I 9064	SHELBY -FRANKLIN	5-106 5- 37	43.3- 48.6	5.3	INTER	6/62	75 13730	OUTER	10/74	14	44	3.5	18.26	8150
								OUTER	9/77	31	42	2.3	24.03	8630
							77 16130	OUTER	7/79	36	35	3.6	28.11	9000
							75 13730	INNER	10/74	14	53	2.4	6.04	2690

PORTLAND CEMENT CONCRETE SURFACE - INTERSTATE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9064	FRANKLIN	5- 37	48.0- 53.1	5.1	INTER	5/62	75 11970	OUTER	10/74	22	39	1.4	16.87	7470
								OUTER	9/77	41	41	1.6	22.05	7870
							77 14900	OUTER	7/79	36	34	2.1	25.95	8300
							75 11970	INNER	10/74	21	51	2.4	4.74	2100
I 9064	FRANKLIN	5- 37	53.1- 57.9	4.8	INTER	11/62	75 15220	OUTER	10/74	18	36	2.7	15.81	7290
								OUTER	11/77	44	37	2.2	22.39	8170
							77 17500	OUTER	7/79	37	30	2.6	26.34	8700
							75 15220	INNER	10/74	19	48	3.4	4.40	2030
I 9064	FRANKLIN -WOODFORD	5- 37 7-120	57.9- 65.3	7.4	INTER	9/73	75 10670	OUTER	10/74	26	42	4.1	3.29	17280
								OUTER	9/77	72	38	2.7	8.01	10920
							77 14160	OUTER	7/79	57	31	2.7	11.83	11200
							75 10670	INNER	10/74	28	53	2.8	0.75	3960
I 9064	WOODFORD -FAYETTE	7-120 7- 34	65.3- 75.2	9.9	INTER	9/73		INNER	9/77	15	58	4.3	1.83	2500
							77 14160	INNER	7/79	33	49	4.2	3.07	2900
							75 11030	OUTER	10/74	36	43	3.3	2.96	15550
								OUTER	9/77	79	38	2.5	7.81	10640
I 9064	FAYETTE	7- 34	82.3- 89.5	7.2	INTER	11/63	77 14550	OUTER	7/79	71	32	3.0	11.69	11100
							75 11030	INNER	10/74	36	52	2.3	0.60	3170
								INNER	9/77	6	56	0.5	1.75	2380
							77 14550	INNER	7/79	35	51	3.9	3.04	2900
I 9064	MONTGOMERY -BATH	7- 87 9- 6	112.4-122.8	10.4	INTER	4/68	75 16220	OUTER	8/74	25	38	2.4	18.40	9390
								OUTER	9/77	57	35	1.7	25.24	9990
							77 15340	OUTER	9/79	57	35	1.9	29.39	10200
							75 16220	INNER	8/74	24	48	3.0	7.84	4000
I 9064	BATH	9- 6	123.0-129.0	6.0	INTER	9/68	75 5400	OUTER	8/74	37	42	2.9	10.36	8980
								OUTER	9/77	79	38	2.5	15.09	7600
							77 7320	OUTER	9/79	83	39	2.2	15.59	7500
							75 5400	INNER	8/74	36	53	2.5	1.15	1000
I 9064	ROWAN	9-103	129.0-137.3	8.3	INTER	8/68	75 5390	OUTER	8/74	23	39	2.9	4.33	4010
								OUTER	9/77	48	39	1.8	7.05	4290
							77 7510	OUTER	9/79	49	39	1.8	9.61	4800
							75 5390	INNER	8/74	22	51	3.3	0.48	450
I 9064	ROWAN	9-103	137.3-145.9	8.6	INTER	8/69	75 5390	OUTER	8/74	26	40	2.7	3.60	3290
								OUTER	9/77	65	41	3.2	6.32	3810
							77 6240	OUTER	9/79	66	42	2.7	8.41	4200
							75 5390	INNER	8/74	28	50	2.4	0.40	370
I 9064	ROWAN	9-103	137.3-145.9	8.6	INTER	8/69	75 5350	OUTER	8/74	25	39	2.9	3.84	4220
								OUTER	9/77	66	39	2.3	6.55	4430
							77 5740	OUTER	9/79	69	40	2.7	8.45	4600
							75 5350	INNER	8/74	28	53	2.8	0.45	490

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9065	SIMPSON	3-107	0.0- 2.0	2.0	INTER	10/69	75 15070	OUTER	8/74	6	45	3.2	6.02	6780
								OUTER	8/77	16	38	2.5	12.17	8530
							77 17060	OUTER	6/79	16	40	2.2	16.58	9400
							75 15070	INNER	8/74	5	51	3.3	2.03	2290
I 9065	SIMPSON	3-107	2.0- 5.8	3.8	INTER	12/65	75 16580	OUTER	8/74	10	44	3.6	13.77	8670
								OUTER	8/77	31	40	1.3	20.37	9580
							77 17150	OUTER	6/79	30	41	2.6	24.71	10000
							75 16580	INNER	8/74	8	58	3.5	5.19	3270
I 9065	SIMPSON	3-107	5.8- 13.1	7.3	INTER	12/65	75 16580	OUTER	8/74	25	43	3.8	13.77	8670
								OUTER	8/77	57	42	1.7	20.37	9580
							77 17580	OUTER	6/79	58	43	2.8	24.81	10100
							75 16580	INNER	8/74	25	57	2.5	5.19	3270
I 9065	SIMPSON -WARREN	3-107 3-114	13.1- 22.3	9.2	INTER	11/65	75 15040	OUTER	8/74	30	41	2.8	14.40	8990
								OUTER	8/77	71	38	2.4	20.53	9590
							77 17590	OUTER	6/79	72	39	2.6	25.07	10100
							75 15040	INNER	8/74	27	55	2.9	5.34	3330
I 9065	WARREN	3-114	22.3- 28.5	6.2	INTER	11/66	75 15880	OUTER	8/74	20	43	2.6	12.06	8500
								OUTER	9/77	49	41	1.6	18.74	9450
							77 17160	OUTER	6/79	45	39	2.5	22.84	9900
							75 15880	INNER	8/74	21	54	3.5	3.79	2670
I 9065	WARREN	3-114	28.5- 35.6	7.1	INTER	11/66	75 16200	OUTER	8/74	28	40	2.1	15.43	10860
								OUTER	9/77	58	43	3.0	22.20	11200
							77 16590	OUTER	6/79	54	38	2.3	26.15	11400
							75 16200	INNER	8/74	27	48	1.9	7.10	5000
I 9065	WARREN -BARREN	3-114 3- 5	35.6- 47.7	12.1	INTER	5/69	75 16200	OUTER	8/74	47	37	3.0	9.96	10320
								OUTER	9/77	92	44	2.1	16.74	10960
							77 18640	OUTER	7/79	00	39	3.5	21.31	11500
							75 16200	INNER	8/74	43	46	3.3	4.00	4150
I 9065	BARREN -HART	3- 5 4- 50	47.7- 57.6	9.9	INTER	10/68	75 17170	OUTER	8/74	31	36	2.6	10.18	9510
								OUTER	9/77	78	42	1.9	17.26	10570
							77 17940	OUTER	7/79	81	42	2.7	21.60	11000
							75 17170	INNER	8/74	30	47	4.3	3.85	3600
I 9065	HART	4- 50	57.6- 61.0	3.4	INTER	11/67	75 17200	OUTER	8/74	12	39	3.2	12.84	10380
								OUTER	9/77	28	39	2.1	19.93	11070
							77 18310	OUTER	7/79	26	39	2.3	24.35	11400
							75 17200	INNER	8/74	11	50	2.6	5.39	4350

PORTLAND CEMENT CONCRETE SURFACE - INTERSTATE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9065	LARUE	4- 62	76.0- 78.7	2.7	INTER	10/63	75 18210 77 18060	OUTER OUTER	9/77 7/79	19 21	37 40	2.9 3.4	20.56 24.84	8070 8600
I 9065	HARDIN	4- 47	78.7- 90.7	12.0	INTER	12/59	75 18500 77 18660 75 18500	OUTER OUTER INNER	8/74 9/77 7/79 8/74	43 96 97 40	37 38 40 49	4.1 2.5 3.3 4.8	13.84 21.31 25.73 6.57	5160 6570 7200 2450
I 9065	HARDIN	4- 47	91.5-103.3	11.8	INTER	10/57	75 22900 77 25810 75 22900	OUTER OUTER INNER	9/74 10/77 7/79 9/74	38 93 89 40	43 39 44 50	3.8 3.3 4.7 4.6	25.43 33.95 39.56 9.39	8220 9310 10000 3040
I 9065	BULLITT	5- 15	103.3-115.2	11.9	INTER	10/57	75 24200 77 30840 75 24200	OUTER OUTER INNER	9/74 10/77 7/79 9/74	44 93 95 41	40 37 39 48	3.0 2.1 3.2 4.3	26.74 35.59 42.10 10.78	8650 9770 10600 3490
I 9065	BULLITT -JEFFERSON	5- 15 5- 56	115.2-128.3	13.1	INTER	10/57	75 25700	OUTER INNER	9/74 9/74	44 46	39 45	3.7 4.1	36.59 19.14	11830 6190
I 9065	JEFFERSON	5- 56	128.3-130.8	2.5	INTER	10/57	75 28400	OUTER INNER	9/74 9/74	12 10	37 41	2.8 2.3	37.39 20.10	12090 6500
I 9065	JEFFERSON	5- 56	130.8-136.7	5.9	INTER	9/71	75 78000	OUTER	10/74	22	38	4.1	10.51	18790
I 9065	JEFFERSON	5- 56	130.8-136.4	5.6	INTER	9/71	77 85930	OUTER	7/79	42	36	3.8	24.81	17400
I 9065	JEFFERSON	5- 56	130.8-136.7	5.9	INTER	9/71	75 78000	MIDDLE	10/74	24	38	4.0	20.66	36930
I 9065	JEFFERSON	5- 56	130.8-136.4	5.6	INTER	9/71	77 85930	MIDDLE	7/79	22	34	4.7	49.99	35000
I 9065	JEFFERSON	5- 56	130.8-136.7	5.9	INTER	9/71	75 78000	INNER	10/74	27	36	4.2	21.37	38200
I 9065	JEFFERSON	5- 56	130.8-136.4	5.6	INTER	9/71	77 85930	INNER	7/79	23	38	4.8	49.28	34500
I 9065	JEFFERSON	5- 56	136.4-136.7	0.3	INTER	9/71	77 91000	OUTER MIDDLE	7/79 7/79	6 6	32 35	1.0 2.4	25.28 50.93	17700 35600

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9071	JEFFERSON	5- 56	0.2- 1.7	1.5	INTER	5/67	75 37970	OUTER	7/77	12	39	2.2	51.13	27470
							77 38810	OUTER	7/79	12	33	2.0	59.07	26600
							75 37970	INNER	7/77	11	44	2.3	34.57	18570
							77 38810	INNER	7/79	6	36	1.8	40.57	18300
I 9071	JEFFERSON	5- 56	1.7- 6.2	4.5	INTER	8/68	75 37970	OUTER	9/74	17	42	4.2	39.84	35750
								INNER	9/74	18	47	4.0	26.17	23480
I 9071	JEFFERSON	5- 56	1.7- 5.0	3.3	INTER	8/68	75 37970	OUTER	7/77	26	42	2.6	51.13	31310
							77 31020	OUTER	7/79	26	37	3.1	57.59	28900
							75 37970	INNER	7/77	26	48	2.1	34.57	21170
							77 31020	INNER	7/79	13	40	3.6	38.47	19300
I 9071	JEFFERSON	5- 56	5.0- 6.2	1.2	INTER	8/68	75 30000	OUTER	7/77	9	41	2.3	50.79	31100
							77 29670	OUTER	7/79	8	36	1.5	57.32	28800
I 9071	JEFFERSON	5- 56	6.2- 9.1	2.9	INTER	9/68	75 17200	OUTER	9/74	12	38	5.7	25.19	22920
								OUTER	7/77	22	40	1.5	31.72	19610
							77 29670	OUTER	7/79	23	34	1.6	38.87	19700
							75 17200	INNER	9/74	10	48	2.5	13.99	12730
I 9071	JEFFERSON -OLDHAM	5- 56 5- 93	9.1- 14.4	5.3	INTER	8/69	75 11420	OUTER	9/74	19	41	3.3	11.88	12750
								OUTER	7/77	42	42	2.2	16.64	11470
							77 17510	OUTER	7/79	43	34	2.4	21.56	11900
							75 11420	INNER	9/74	20	50	4.3	6.52	7000
I 9071	OLDHAM	5- 93	14.4- 21.5	7.1	INTER	8/69	75 11420	OUTER	9/74	24	40	4.2	11.88	12750
								OUTER	7/77	54	43	1.9	16.64	11470
							77 15440	OUTER	7/79	57	35	1.9	21.03	11600
							75 11420	INNER	9/74	24	51	4.4	6.52	7000
I 9071	OLDHAM -HENRY	5- 93 5- 52	21.5- 27.7	6.2	INTER	7/69	75 10900	OUTER	9/74	22	43	2.9	8.11	8560
								OUTER	7/77	48	44	2.2	12.69	8660
							77 12580	OUTER	7/79	45	38	2.0	16.34	9000
							75 10900	INNER	9/74	20	50	4.6	2.45	2590
I 9071	HENRY	5- 52	27.7- 33.8	6.1	INTER	7/69	75 10370	OUTER	9/74	24	40	2.7	7.78	8210
								OUTER	7/77	47	42	2.0	12.18	8310
							77 11510	OUTER	7/79	50	37	2.3	15.55	8500
							75 10370	INNER	9/74	23	53	2.8	2.14	2250
I 9071	HENRY	5- 52	33.8- 37.2	3.4	INTER	7/69	75 10370	OUTER	9/74	12	40	2.1	7.78	8210
								OUTER	7/77	27	43	2.1	12.18	8310
							77 11450	OUTER	7/79	27	38	2.1	15.53	8500
							75 10370	INNER	9/74	11	54	3.6	2.14	2250

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9071	HENRY -CARROLL	5- 52 6- 21	37.2- 44.3	7.1	INTER	12/68	75 10370	OUTER	9/74	25	39	2.9	8.06	7650
								OUTER	7/77	57	38	2.2	12.46	7920
							77 12400	OUTER	7/79	58	35	2.9	16.09	8300
							75 10370	INNER	9/74	23	51	3.3	1.98	1880
I 9071	CARROLL	6- 21	44.3- 50.1	5.8	INTER	1/68	75 10200	OUTER	9/74	23	39	3.4	10.27	8410
								OUTER	7/77	43	39	2.3	14.61	8400
							77 11570	OUTER	7/79	43	37	2.0	18.01	8600
							75 10200	INNER	9/74	21	52	3.9	2.81	2300
I 9071	CARROLL -GALLATIN	6- 21 6- 39	50.1- 56.9	6.8	INTER	1/68	75 10200	OUTER	9/74	25	44	2.7	10.27	8410
								OUTER	7/77	54	38	2.6	14.61	8400
							77 11700	OUTER	7/79	53	39	3.4	18.05	8600
							75 10200	INNER	9/74	25	56	2.9	2.81	2300
I 9071	GALLATIN	6- 39	56.9- 61.8	4.9	INTER	1/68	75 10200	OUTER	9/74	19	41	2.3	10.27	8410
								OUTER	7/77	40	35	1.7	14.61	8400
							77 11830	OUTER	7/79	39	36	2.3	18.30	8700
							75 10200	INNER	9/74	18	47	2.6	2.24	2300
I 9071	GALLATIN	6- 39	61.8- 69.9	8.1	INTER	1/68	75 11660	OUTER	9/74	29	40	3.3	10.66	8730
								OUTER	7/77	63	36	3.0	15.50	8910
							77 14510	OUTER	7/79	65	36	2.4	19.63	9400
							75 11660	INNER	9/74	31	48	3.4	2.98	2450
I 9071	BOONE	6- 8	69.9- 77.6	7.7	INTER	1/68	75 11060	OUTER	9/74	22	42	2.7	10.39	8510
								OUTER	7/77	51	37	2.1	15.03	8640
							77 14350	OUTER	7/79	56	36	2.0	19.15	9100
							75 11060	INNER	9/74	22	53	3.5	3.17	2600
I 9075	WHITLEY	11-118	0.0- 3.6	3.6	INTER	11/62	75 16680	OUTER	7/74	11	39	4.0	14.65	6870
								OUTER	9/77	28	39	3.2	21.75	8030
							77 17810	OUTER	8/79	29	37	2.2	26.31	8600
							75 16680	INNER	7/74	13	50	3.4	3.71	1740
I 9075	WHITLEY	11-118	3.6- 10.2	6.6	INTER	11/65	75 4920	OUTER	7/74	28	41	3.2	12.59	7940
								OUTER	9/77	49	41	2.6	15.14	7000
							77 17470	OUTER	8/79	53	39	2.8	20.65	8200
							75 4920	INNER	7/74	26	54	2.0	3.38	2130
I 9075	WHITLEY	11-118	10.2- 15.4	5.2	INTER	10/66	75 14370	OUTER	7/74	15	39	3.1	11.33	7990
								OUTER	9/77	40	40	2.8	17.68	8860
							77 17350	OUTER	8/79	40	36	3.1	22.30	9500
							75 14370	INNER	7/74	15	53	2.5	3.03	2140
I 9075	WHITLEY	11-118	15.4- 24.7	9.3	INTER	1/68	75 15400	OUTER	7/74	32	42	2.1	9.89	8310
								OUTER	9/77	71	39	2.4	16.58	9390
							77 19070	OUTER	8/79	73	35	2.2	21.54	10200
							75 15400	INNER	7/74	32	53	2.3	3.14	2640

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I 9075	WHITLEY -LAUREL	11-118 11- 63	24.7- 28.9	4.2	INTER	10/68	75 16220	OUTER	7/74	13	42	2.1	7.75	7360
								OUTER	9/77	33	39	2.1	14.71	9020
							77 20480	OUTER	8/79	34	35	2.0	19.95	10100
							75 16220	INNER	7/74	13	54	3.5	2.16	2050
I 9075	LAUREL	11- 63	28.9- 34.4	5.5	INTER	10/69	75 16510	OUTER	7/74	18	38	2.7	8.91	10240
								OUTER	9/77	44	36	1.8	15.96	11030
							77 19920	OUTER	8/79	44	33	1.3	21.05	11700
							75 16510	INNER	7/74	19	49	2.4	3.43	3940
I 9075	LAUREL	11- 63	34.4- 40.7	6.3	INTER	10/69	75 16200	OUTER	7/74	23	37	2.3	8.59	9860
								OUTER	9/77	49	36	2.1	15.54	10730
							77 20590	OUTER	8/79	48	33	1.2	20.81	11600
							75 16200	INNER	7/74	23	49	4.1	3.39	3890
I 9075	LAUREL	11- 63	40.7- 46.9	6.2	INTER	10/69	75 16200	OUTER	8/74	24	40	2.2	8.60	9720
								OUTER	9/77	43	37	1.9	15.38	10620
							77 20500	OUTER	8/79	49	35	1.9	20.63	11500
							75 16200	INNER	8/74	25	50	3.6	3.35	3780
I 9075	LAUREL	11- 63	46.9- 50.8	3.9	INTER	7/69	75 17260	OUTER	8/74	16	41	2.9	8.95	9610
								OUTER	9/77	30	36	2.5	16.05	10750
							77 20500	OUTER	8/79	30	35	2.7	21.23	11500
							75 17260	INNER	8/74	16	48	2.8	3.44	3690
I 9075	ROCKCASTLE	8-102	65.2- 68.4	3.2	INTER	9/68	75 17760	OUTER	9/74	12	37	1.9	11.93	10870
								OUTER	9/77	26	35	1.8	18.99	11540
							77 22590	OUTER	8/79	24	32	1.7	24.61	12400
							75 17760	INNER	9/74	12	45	2.9	6.00	5470
I 9075	ROCKCASTLE -MADISON	8-102 7- 76	68.4- 75.5	7.1	INTER	10/67	75 18630	OUTER	9/74	28	37	2.4	13.35	10560
								OUTER	9/77	52	35	1.9	20.65	11400
							77 22590	OUTER	8/79	56	32	2.3	26.22	12100
							75 18630	INNER	9/74	27	46	2.8	6.76	5340
I 9075	MADISON	7- 76	75.5- 87.2	11.7	INTER	12/66	75 21840	OUTER	9/74	44	38	2.3	15.69	11080
								OUTER	9/77	90	38	1.9	23.87	12150
							77 22790	OUTER	8/79	92	35	1.8	29.30	12700
							75 21840	INNER	9/74	45	46	2.4	9.75	6880
I 9075	FAYETTE	7- 34	100.4-103.7	3.3	INTER	11/63	75 22500	OUTER	9/74	14	35	1.8	23.21	11720
								OUTER	9/77	26	32	1.5	31.55	12480
							77 27640	OUTER	8/79	26	31	1.6	37.92	13200
							75 22500	INNER	9/74	13	43	2.6	14.05	7100
I 9075	FAYETTE	7- 34	103.7-109.9	6.2	INTER	9/64	75 20210	OUTER	9/74	22	36	2.2	18.46	10100
								OUTER	9/77	47	32	1.6	26.20	11030
							77 29350	OUTER	8/79	32	32	1.4	33.06	12100
							75 20210	INNER	9/74	21	48	2.8	9.19	5030

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9075	FAYETTE	7- 34	109.9-116.1	6.2	INTER	7/64	75 29620	OUTER	10/74	10	39	3.5	23.55	12610
								OUTER	9/77	50	33	2.0	33.44	13890
								INNER	10/74	9	43	3.6	12.46	6670
								INNER	9/77	40	39	3.2	18.56	7710
I 9075	FAYETTE	7- 34	116.1-118.4	2.3	INTER	8/64	75 30170	OUTER	10/74	26	41	3.4	22.10	11930
								OUTER	7/77	19	36	3.2	31.56	13360
								OUTER	9/79	4	39	1.5	37.97	13800
								INNER	10/74	26	47	3.5	12.11	6540
I 9075	FAYETTE -SCOTT	7- 34 7-105	118.7-122.4	3.7	INTER	10/63	75 21760	INNER	7/77	11	40	4.0	18.04	7630
								OUTER	10/74	9	41	4.0	21.45	10700
								OUTER	7/77	29	38	1.1	29.04	11550
								OUTER	9/79	29	38	1.2	35.23	12100
I 9075	SCOTT	7-105	122.4-124.7	2.3	INTER	10/63	75 21760	INNER	10/74	7	49	5.5	11.57	5770
								OUTER	10/74	11	42	2.9	21.45	10700
								OUTER	7/77	18	38	2.4	29.04	11550
								OUTER	10/79	19	39	2.1	34.44	11800
I 9075	SCOTT	7-105	124.7-125.7	1.0	INTER	10/63	75 21760	INNER	10/74	8	51	4.2	11.57	5770
								OUTER	7/77	8	40	1.6	29.04	11550
								OUTER	10/79	8	41	1.6	34.54	11900
								OUTER	10/74	26	37	3.2	19.76	9570
I 9075	SCOTT	7-105	125.7-132.0	6.3	INTER	6/63	75 20900	OUTER	7/77	48	36	1.9	27.13	10540
								OUTER	10/79	50	37	1.7	32.99	11100
								INNER	10/74	21	49	2.4	10.03	4850
								OUTER	10/74	18	39	2.8	19.76	9570
I 9075	SCOTT	7-105	132.0-136.2	4.2	INTER	6/63	75 20900	OUTER	7/77	34	36	1.5	27.14	10540
								OUTER	10/79	35	38	2.1	32.75	11000
								INNER	10/74	17	49	2.9	10.03	4850
								OUTER	10/74	14	39	2.2	19.74	9700
I 9075	SCOTT	7-105	136.2-140.3	4.1	INTER	8/63	75 20020	OUTER	7/77	33	34	2.9	26.90	10570
								OUTER	10/79	31	35	2.6	32.62	11100
								INNER	10/74	12	50	1.6	8.98	4410
								OUTER	10/74	13	38	3.9	19.74	9700
I 9075	SCOTT -GRANT	7-105 6- 41	140.3-144.4	4.1	INTER	8/63	75 20020	OUTER	7/77	31	34	2.7	26.90	10570
								OUTER	9/79	32	34	3.2	32.77	11100
								INNER	10/74	15	50	2.3	8.98	4410
								OUTER	10/74	17	39	3.3	21.19	10650
I 9075	GRANT	6- 41	144.4-148.6	4.2	INTER	11/63	75 20400	OUTER	7/77	33	36	2.5	28.44	11380
								OUTER	9/79	33	37	2.8	34.86	12000
								INNER	10/74	14	52	1.9	11.67	5870
								OUTER	10/74	14	52	1.9	11.67	5870

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9075	GRANT	6- 41	148.6-152.5	3.9	INTER	11/63	75 20400	OUTER	10/74	14	39	2.4	21.19	10650
								OUTER	7/77	32	36	2.5	28.45	11380
							77 23670	OUTER	9/79	32	39	3.0	34.86	12000
							75 20400	INNER	10/74	11	50	3.1	11.67	5870
I 9075	GRANT	6- 41	152.5-154.2	1.7	INTER	11/63	75 20400	OUTER	10/74	6	41	2.4	21.19	10650
								OUTER	7/77	13	35	2.0	28.44	11380
							77 23670	OUTER	9/79	14	38	2.4	34.86	12000
							75 20400	INNER	10/74	13	49	3.6	11.67	5870
I 9075	GRANT	6- 41	154.2-158.5	4.3	INTER	8/62	75 20280	OUTER	10/74	16	36	3.2	23.22	10470
								OUTER	7/77	33	35	2.7	30.44	11160
							77 23960	OUTER	9/79	34	36	4.1	36.93	11800
							75 20280	INNER	10/74	16	44	2.8	12.57	5670
I 9075	GRANT	6- 41	158.5-166.3	7.8	INTER	11/61	75 21190	OUTER	10/74	29	36	3.5	25.98	11040
								OUTER	7/77	64	35	2.1	33.44	11670
							77 22400	OUTER	9/79	62	36	2.4	39.51	12100
							75 21190	INNER	10/74	29	46	2.9	14.27	6060
I 9075	KENTON -BOONE	6- 59	166.3-171.3	5.0	INTER	4/62	75 22210	OUTER	10/74	19	42	3.2	31.27	13720
		6- 8						OUTER	7/77	39	39	2.3	38.96	13970
								INNER	10/74	18	51	2.1	15.72	6900
I 9075	BOONE	6- 8	171.3-175.2	3.9	INTER	4/62	75 42200	OUTER	10/74	16	38	2.8	23.09	10140
								OUTER	7/77	31	38	1.7	27.61	9900
								MIDDLE	10/74	16	43	3.9	21.64	9500
								MIDDLE	7/77	19	38	1.6	29.59	10610
								INNER	10/74	9	40	2.4	16.34	7170
								INNER	7/77	18	45	1.3	25.37	9100
I 9075	BOONE	6- 8	175.2-180.1	4.9	INTER	4/62	75 44060	OUTER	10/74	19	36	4.0	27.26	11970
								OUTER	7/77	37	36	2.2	31.98	11470
								MIDDLE	10/74	16	45	4.2	25.23	11070
								MIDDLE	7/77	37	39	2.4	33.53	12030
								INNER	10/74	16	41	2.4	18.58	8150
								INNER	7/77	36	43	2.4	28.01	10050
I 9075	BOONE	6- 8	180.1-183.3	3.2	INTER	4/62	75 58180	OUTER	10/74	14	36	1.8	35.06	15390
								OUTER	7/77	26	33	1.9	40.69	14600
								MIDDLE	10/74	12	44	2.6	34.21	15010
								MIDDLE	7/77	25	34	1.4	46.07	16520
								INNER	10/74	12	38	2.2	33.44	14680
								INNER	7/77	24	38	3.8	45.60	16350

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I 9075	KENTON	6- 59	183.3-187.7	4.4	INTER	1/63	75 78770	OUTER MIDDLE INNER	10/74 10/74 10/74	18 15 18	33 41 35	3.4 3.1 4.0	40.29 44.83 43.38	18820 20940 20260
I 9075	KENTON	6- 59	183.3-184.4	1.1	INTER	1/63	75 78770	OUTER MIDDLE INNER	7/77 7/77 7/77	10 11 9	33 34 36	1.8 2.0 3.1	48.31 60.88 59.43	18230 22970 22420
I 9075	KENTON	6- 59	185.5-187.7	2.2	INTER	1/63	75 78770	OUTER MIDDLE INNER	7/77 7/77 7/77	15 11 14	32 34 36	1.7 3.5 4.5	48.31 60.88 59.43	18230 22970 22420
I 9075	KENTON	6- 59	187.7-191.1	3.4	INTER	7/62	75109020	OUTER MIDDLE INNER	10/74 10/74 10/74	13 13 14	32 35 31	2.1 4.7 2.5	57.46 55.78 63.70	25730 24980 28530
I 9264	JEFFERSON	5- 56	0.0- 7.5	7.5	INTER	9/70	75 36150	OUTER INNER	10/74 10/74	27 28	42 52	5.0 2.9	8.59 3.81	11570 5130
I 9264	JEFFERSON	5- 56	0.5- 1.7	1.2	INTER	12/68	75 28000 77 30200 75 28000 77 30200	OUTER OUTER INNER INNER	8/77 7/79 8/77 7/79	8 10 9 6	41 31 46 32	2.6 2.2 3.4 3.3	27.78 34.17 16.29 20.30	17640 17800 10340 10500
I 9264	JEFFERSON	5- 56	1.7- 2.9	1.2	INTER	11/70	75 31630 77 31170 75 31630 77 31170	OUTER OUTER MIDDLE MIDDLE INNER	8/77 7/79 8/77 7/79 7/79	9 10 9 5 6	43 35 45 35 38	2.4 2.2 4.5 2.8 7.5	23.56 12.0 15.34 17.8 19.8	19230 7590 12530 11260 12520
I 9264	JEFFERSON	5- 56	2.9- 3.8	0.9	INTER	11/70	75 36150 77 33920 75 36150 77 33920	OUTER OUTER MIDDLE MIDDLE INNER	8/77 7/79 8/77 7/79 7/79	8 6 7 4 2	42 33 43 34 35	3.1 1.7 3.6 0.5 0.0	25.72 13.4 18.53 20.1 20.9	20990 8480 15130 12710 13220
I 9264	JEFFERSON	5- 56	3.8- 4.5	0.7	INTER	10/70	75 37300 77 34320 75 37300 77 34320	OUTER OUTER MIDDLE MIDDLE INNER	8/77 7/79 8/77 7/79 7/79	6 8 6 3 4	39 34 42 30 41	3.7 4.5 2.7 1.1 4.0	26.76 13.9 19.68 20.7 23.1	21570 8710 15860 12970 14470

PORTLAND CEMENT CONCRETE SURFACE - INTERSTATE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9264	JEFFERSON	5- 56	5.9- 7.1	1.2	INTER	1/71	75 30310	OUTER	8/77	9	39	2.1	22.14	18530
							77 32280	OUTER	7/79	9	33	2.0	11.5	7410
							75 30310	MIDDLE	8/77	9	42	3.7	13.91	11650
							77 32280	MIDDLE INNER	7/79 7/79	5 4	29 39	1.7 4.9	17.5 19.4	11280 12510
I 9264	JEFFERSON	5- 56	7.1- 8.2	1.1	INTER	9/73	75 46000	OUTER	8/77	9	41	3.7	18.05	25490
							77 51730	OUTER	10/79	9	34	4.3	10.2	8190
							75 46000	MIDDLE	8/77	9	42	3.1	14.56	20570
							77 51730	MIDDLE INNER	10/79 10/79	5 3	33 49	8.8 0.6	18.7 21.7	15010 17420
I 9264	JEFFERSON	5- 56	20.2- 22.1	1.9	INTER	9/67	75 57000	OUTER INNER	10/74 10/74	8 7	42 48	4.5 3.1	24.93 16.44	19340 12750
I 9264	JEFFERSON	5- 56	22.4- 23.1	0.7	INTER	8/68	77 27180	OUTER INNER	7/79 7/79	4 2	37 41	1.7 2.8	35.16 20.74	17700 10400
I 9275	KENTON	6- 59	0.0- 0.6	0.6	INTER	7/77	77 17100	OUTER	9/79	4	43	6.9	2.03	5100
I 9275	KENTON -BOONE	6- 59	0.6- 4.1	3.5	INTER	9/73	77 8580	OUTER	9/79	14	37	1.7	3.26	3000
		6- 8						OUTER	9/79	14	45	4.7	1.24	3000
I 9275	BOONE	6- 8	4.1- 7.4	3.3	INTER	6/77	77 8390	OUTER	9/79	27	51	3.9	1.22	2900
I 9275	BOONE	6- 8	7.4- 13.5	6.1	INTER	8/77	77 7200	OUTER	9/79	50	49	4.7	2.39	6200
I 9275	KENTON	6- 59	77.7- 78.0	0.3	INTER	4/76	77 12240	OUTER	9/79	2	42	0.0	6.15	9800
I 9275	KENTON	6- 59	78.1- 79.0	0.9	INTER	4/76	77 12240	OUTER	9/79	8	42	4.9	6.15	9800
I 9275	KENTON	6- 59	79.0- 82.4	3.4	INTER	11/77	77 15980	OUTER	9/79	25	40	3.9	4.09	12100
I 9275	KENTON	6- 59	82.4- 83.5	1.1	INTER	7/76	77 18590	OUTER	9/79	9	47	7.5	7.68	13200
I 9275	KENTON	6- 59	83.5- 83.7	0.2	INTER	7/77	77 18590	OUTER	9/79	1	57	0.0	2.16	5400

PORTLAND CEMENT CONCRETE SURFACE - TOLLS ROADS

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9000	CLARK	7- 25	0.0- 4.3	4.3	FAP-PKY	11/62	75 5800	OUTER	9/74	16	39	3.4	7.25	3350
							77 6470	OUTER	7/77	17	32	1.8	9.86	3690
							77 6470	OUTER	9/79	17	39	1.7	12.19	4000
							75 5800	INNER	9/74	16	55	2.3	0.82	380
PK9000	CLARK	7- 25	4.3- 10.6	6.3	FAP-PKY	11/62	75 5800	OUTER	9/74	26	40	1.9	7.23	3350
							77 6470	OUTER	7/77	25	34	1.8	9.84	3690
							77 6470	OUTER	9/79	25	40	2.1	12.17	4000
							75 5800	INNER	9/74	25	53	2.2	0.81	380
PK9000	CLARK -POWELL	7- 25 10- 99	10.6- 16.1	5.5	FAP-PKY	11/62	75 5800	OUTER	9/74	21	38	2.2	7.25	3350
							77 6740	OUTER	7/77	22	33	2.2	9.86	3690
							77 6740	OUTER	9/79	22	39	1.7	12.30	4000
							75 5800	INNER	9/74	20	51	2.9	0.82	380
PK9000	POWELL	10- 99	16.1- 18.9	2.8	FAP-PKY	11/62	75 5800	OUTER	9/74	10	39	2.5	6.63	3070
							77 6990	OUTER	7/77	11	36	1.8	9.24	3460
							77 6990	OUTER	9/79	11	42	2.7	11.77	3800
							75 5800	INNER	9/74	11	51	2.6	0.75	350
PK9000	POWELL	10- 99	18.9- 24.6	5.7	FAP-PKY	11/62	75 5800	OUTER	9/74	21	36	3.1	6.64	3070
							77 7350	OUTER	7/77	23	34	2.4	9.25	3460
							77 7350	OUTER	9/79	23	39	2.3	11.92	3900
							75 5800	INNER	9/74	18	51	3.5	0.75	350
PK9000	POWELL	10- 99	24.6- 28.3	3.7	FAP-PKY	11/62	75 5030	OUTER	9/74	16	41	2.6	5.20	2410
							77 5540	OUTER	7/77	15	36	1.8	7.50	2810
							77 5540	OUTER	9/79	14	42	2.7	9.52	3100
							75 5030	INNER	9/74	14	55	2.7	0.57	270
PK9000	POWELL	10- 99	28.3- 33.0	4.7	FAP-PKY	11/62	75 5030	OUTER	9/74	18	40	3.7	5.34	2470
							77 5540	OUTER	7/77	19	31	2.1	7.64	2860
							77 5540	OUTER	9/79	19	36	3.2	9.66	3100
							75 5030	INNER	9/74	18	54	3.7	0.59	270
PK9000	POWELL -WOLFE	10- 99 10-119	33.0- 37.4	4.4	FAP-PKY	12/62	75 5030	OUTER	9/74	14	36	3.5	5.33	2480
							77 5540	OUTER	7/77	18	32	3.5	7.63	2870
							77 5540	OUTER	9/79	22	35	3.7	9.65	3200
							75 5030	INNER	9/74	13	55	2.5	0.58	270
PK9000	WOLFE	10-119	37.4- 43.1	5.7	FAP-PKY	12/62	75 5030	OUTER	9/74	23	38	3.8	5.34	2490
							77 6030	OUTER	7/77	23	32	5.0	7.64	2880
							77 6030	OUTER	9/79	45	36	4.2	9.82	3200
							75 5030	INNER	9/74	19	51	3.3	0.59	280

PORTLAND CEMENT CONCRETE SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9001	HOPKINS	2- 54	25.7- 37.2	11.5	FAP-PKY	11/63	75 3040	OUTER	7/74	34	52	3.5	4.16	2130
							77 3520	OUTER	6/77	48	51	2.1	5.65	2280
							77 3520	OUTER	8/79	46	46	5.0	6.94	2400
							75 3040	INNER	7/74	34	53	3.0	0.45	230
PK9001	HOPKINS -MUHLENBERG	2- 54 2- 89	37.2- 43.4	6.2	FAP-PKY	11/63	75 3210	OUTER	7/74	13	46	2.5	4.17	2130
							77 3590	OUTER	6/77	24	51	2.5	5.73	2310
							77 3590	OUTER	8/79	23	46	4.6	7.04	2500
							75 3210	INNER	7/74	16	53	2.9	0.46	240
PK9001	MUHLENBERG	2- 89	43.4- 49.8	6.4	FAP-PKY	10/63	75 3210	OUTER	7/74	19	48	2.7	3.27	1660
							77 3590	OUTER	6/77	24	49	2.7	4.83	1940
							77 3590	OUTER	7/79	26	47	2.7	6.13	2100
							75 3210	INNER	7/74	19	51	1.7	0.47	240
PK9001	MUHLENBERG	2- 89	49.8- 55.0	5.2	FAP-PKY	10/63	75 3210	OUTER	7/74	16	47	3.3	4.55	2310
							77 3590	OUTER	6/77	22	49	2.2	6.11	2450
							77 3590	OUTER	7/79	20	42	6.3	7.41	2600
							75 3210	INNER	7/74	16	52	2.5	0.50	260
PK9001	MUHLENBERG	2- 89	55.0- 58.9	3.9	FAP-PKY	10/63	75 3210	OUTER	7/74	8	46	3.0	4.89	2480
							77 3590	OUTER	6/77	13	48	2.3	6.45	2580
							77 3590	OUTER	7/79	17	45	3.9	7.75	2700
							75 3210	INNER	7/74	8	52	1.0	0.54	280
PK9001	MUHLENBERG	2- 89	58.9- 65.7	6.8	FAP-PKY	10/63	75 3210	OUTER	7/74	23	47	2.8	5.10	2590
							77 3590	OUTER	6/77	27	49	2.0	6.66	2670
							77 3590	OUTER	8/79	25	49	4.0	7.97	2800
							75 3210	INNER	7/74	23	50	2.2	0.57	290
PK9001	OHIO	2- 92	65.7- 71.9	6.2	FAP-PKY	10/63	75 3210	OUTER	7/74	19	49	2.3	5.10	2590
							77 3590	OUTER	6/77	24	50	1.9	6.66	2670
							77 3590	OUTER	7/79	24	49	5.0	7.96	2800
							75 3210	INNER	7/74	18	51	1.9	0.57	290
PK9001	OHIO	2- 92	71.9- 82.8	10.9	FAP-PKY	10/63	75 3210	OUTER	6/77	43	52	3.0	6.65	2660
							77 3700	OUTER	9/74	34	51	3.6	5.16	2580
							77 3700	OUTER	7/79	44	48	4.4	7.99	2800
							75 3210	INNER	9/74	35	52	3.8	0.57	290
PK9001	OHIO -GRAYSON	2- 92 4- 43	82.8- 89.9	7.1	FAP-PKY	10/63	75 3590	OUTER	9/74	26	49	4.4	5.19	2600
							77 3640	OUTER	6/77	28	55	2.3	6.84	2740
							77 3640	OUTER	7/79	31	50	4.8	8.13	2800
							75 3590	INNER	9/74	26	52	4.0	0.58	290
PK9001	GRAYSON	4- 43	89.9- 97.5	7.6	FAP-PKY	10/63	75 3590	OUTER	9/74	24	47	3.8	5.24	2620
							77 3640	OUTER	6/77	35	52	2.8	6.89	2760
							77 3640	OUTER	8/79	30	50	5.0	8.20	2800
							75 3590	INNER	9/74	20	52	3.0	0.58	290

PORTLAND CEMENT CONCRETE SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9001	GRAYSON	4- 43	97.5-106.5	9.0	FAP-PKY	10/63	75 3590	OUTER	9/74	27	51	3.2	5.64	2830
							77 3640	OUTER	6/77	37	53	2.8	7.29	2920
							75 3590	OUTER	8/79	35	49	6.0	8.60	3000
							75 3590	INNER	9/74	28	51	3.6	0.61	310
PK9001	GRAYSON	4- 43	106.5-117.2	10.7	FAP-PKY	10/63	75 3590	OUTER	9/74	37	46	4.4	5.87	2940
							77 3640	OUTER	6/77	44	49	4.8	7.52	3010
							75 3590	OUTER	7/79	42	51	4.5	8.79	3100
							75 3590	INNER	9/74	38	54	3.1	0.64	320
PK9002	NELSON	4- 90	23.8- 32.6	8.8	FAP-PKY	10/65	75 3350	OUTER	10/74	31	48	4.0	5.43	3310
							77 3360	OUTER	6/77	35	52	2.3	6.96	3260
							75 3350	OUTER	7/79	35	50	2.4	8.11	3200
							75 3350	INNER	10/74	32	59	2.4	0.60	360
PK9002	NELSON	4- 90	32.6- 39.3	6.7	FAP-PKY	10/65	75 4580	OUTER	10/74	23	50	3.8	5.51	3360
							77 3430	OUTER	6/77	27	52	2.8	7.57	3540
							75 4580	OUTER	7/79	26	50	1.3	8.64	3500
							75 4580	INNER	10/74	24	58	2.6	0.68	420
PK9002	WASHINGTON -ANDERSON	4-115 7- 3	39.3- 45.5	6.2	FAP-PKY	10/65	75 4580	OUTER	10/74	24	47	2.7	6.01	3670
							77 3470	OUTER	6/77	23	49	2.8	8.07	3780
							75 4580	OUTER	7/79	25	48	2.2	9.17	3700
							75 4580	INNER	10/74	21	60	2.7	0.67	410
PK9002	ANDERSON -MERCER	7- 3 7- 84	45.5- 59.6	14.1	FAP-PKY	10/65	75 4580	OUTER	10/74	54	45	4.0	6.47	3950
							77 4400	OUTER	6/77	56	49	2.7	8.53	3990
							75 4580	OUTER	7/79	57	47	2.7	9.99	4000
							75 4580	INNER	10/74	54	59	2.1	0.72	440
PK9004	CHRISTIAN	2- 24	6.8- 10.9	4.1	FAP-PKY	11/68	75 6670	OUTER	7/74	12	47	2.8	2.68	2570
							77 6500	OUTER	6/77	20	47	4.6	5.75	3660
							75 6670	OUTER	10/79	15	47	3.7	8.12	4100
							75 6670	INNER	7/74	12	51	1.7	0.30	290
PK9004	CHRISTIAN	2- 24	10.9- 16.3	5.4	FAP-PKY	11/68	75 3290	OUTER	7/74	18	49	3.4	2.62	2510
							77 4240	OUTER	6/77	21	49	2.9	4.22	2690
							75 3290	OUTER	10/79	22	47	2.9	5.91	3000
							75 3290	INNER	7/74	18	51	2.3	0.28	270
PK9004	CHRISTIAN	2- 24	16.3- 22.9	6.6	FAP-PKY	9/68	75 3290	OUTER	7/74	18	47	3.2	2.68	2500
							77 4520	OUTER	6/77	26	47	4.0	4.28	2680
							75 3290	OUTER	10/79	26	46	2.6	6.08	3000
							75 3290	INNER	7/74	19	51	1.5	0.28	260
PK9004	CHRISTIAN -HOPKINS	2- 24 2- 54	22.9- 30.1	7.2	FAP-PKY	9/68	75 3290	OUTER	7/74	20	46	3.1	2.68	2500
							77 5090	OUTER	6/77	27	46	2.5	4.28	2680
							75 3290	OUTER	10/79	31	46	2.1	6.32	3100
							75 3290	INNER	7/74	19	51	1.7	0.35	330

PORTLAND CEMENT CONCRETE SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9004	HOPKINS	2- 54	44.6- 53.4	8.8	FAP-PKY	7/68	75 3610	OUTER	10/74	31	50	2.0	2.40	2100
							77 7200	OUTER	6/77	35	46	2.3	4.03	2470
							77 7200	OUTER	10/79	33	49	2.7	6.88	3400
							75 3610	INNER	10/74	33	55	2.6	0.30	260
PK9004	WEBSTER -HENDERSON	2-117 2- 51	61.8- 70.3	8.5	FAP-PKY	7/69	75 3780	OUTER	10/74	32	47	3.5	2.37	2470
							77 4800	OUTER	6/77	32	48	3.4	4.07	2810
							77 4800	OUTER	10/79	34	48	3.4	5.96	3200
							75 3780	INNER	10/74	31	57	1.4	0.29	310
PK9004	HENDERSON	2- 51	70.3- 77.2	6.9	FAP-PKY	11/68	75 3780	OUTER	10/74	28	49	2.9	2.35	2180
							77 5960	OUTER	6/77	28	46	2.3	4.05	2580
							77 5960	OUTER	10/79	28	47	2.2	6.41	3200
							75 3780	INNER	10/74	29	57	2.3	0.26	240
PK9004	HENDERSON	2- 51	77.2- 78.4	1.2	FAP-PKY	11/68	77 6900	OUTER	10/79	4	44	1.4	6.78	3400
PK9005	HENDERSON	2- 51	0.0- 8.6	8.6	FAP-PKY	6/70	75 2700	OUTER	10/74	34	52	2.8	1.04	1320
							77 3140	OUTER	6/77	34	52	1.6	2.28	1780
							77 3140	OUTER	10/79	34	55	1.9	3.53	2100
							75 2700	INNER	10/74	33	57	2.0	0.09	110
PK9005	HENDERSON	2- 51	8.6- 15.9	7.3	FAP-PKY	6/70	75 2700	OUTER	10/74	6	49	2.2	1.04	1320
							77 3140	OUTER	6/77	28	52	2.3	2.28	1780
							77 3140	OUTER	10/79	29	53	2.8	3.53	2100
							75 2700	INNER	10/74	7	61	1.0	0.09	110
PK9005	DAVIESS	2- 30	15.9- 23.5	7.6	FAP-PKY	4/71	75 2700	OUTER	10/74	6	49	2.2	1.04	1320
							77 3140	OUTER	6/77	30	49	4.0	2.28	2020
							77 3140	OUTER	10/79	37	53	3.2	3.53	2300
							75 2700	INNER	10/74	7	61	1.0	0.09	110
PK9006	LAUREL	11- 63	0.0- 1.1	1.1	FAP-PKY	12/70	75 2540	OUTER	7/74	10	37	4.2	1.76	2670
							77 5580	OUTER	6/77	5	32	3.9	3.01	2540
							77 5580	OUTER	8/79	2	34	2.4	5.19	3300
							75 2540	INNER	7/74	3	45	2.3	0.10	150
PK9006	LAUREL	11- 63	1.1- 8.8	7.7	FAP-PKY	10/71	75 2540	OUTER	7/74	28	39	4.2	1.18	2330
							77 3640	OUTER	6/77	31	30	4.2	2.52	2440
							77 3640	OUTER	8/79	29	34	3.2	4.05	2800
PK9006	CLAY	11- 26	20.5- 35.3	14.8	FAP-PKY	6/74	75 1750	OUTER	7/74	56	51	3.2	0.03	1550
							77 2400	OUTER	6/77	58	43	4.6	0.95	1740
							77 2400	OUTER	8/79	61	39	3.5	1.96	2100
PK9007	BUTLER -OHIO	3- 16 2- 92	32.6- 42.3	9.7	FAP-PKY	1/73	75 2250	OUTER	8/74	38	50	2.8	0.51	1740
							77 2700	OUTER	6/77	37	47	2.9	1.60	1980
							77 2700	OUTER	6/79	38	47	3.5	2.56	2200
							75 2250	INNER	8/74	37	47	2.7	0.03	110

PORTLAND CEMENT CONCRETE SURFACE - TOLL ROADS (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
PK9007	OHIO	2- 92	42.3- 52.6	10.3	FAP-PKY	1/73	75 2570	OUTER	8/74	38	50	2.7	0.41	1390
								OUTER	6/77	41	52	2.3	1.65	2040
							77 2870	OUTER	6/79	40	48	3.7	2.66	2300
							75 2570	INNER	8/74	36	47	2.4	0.02	70
PK9007	OHIO -DAVIESS	2- 92 2- 30	52.6- 70.2	17.6	FAP-PKY	1/73	75 2570	OUTER	8/74	61	51	3.2	0.59	2000
								OUTER	6/77	68	52	1.8	1.83	2260
							77 4630	OUTER	6/79	69	48	3.6	3.52	3000
							75 2570	INNER	8/74	59	49	2.4	0.03	100

PORTLAND CEMENT CONCRETE SURFACE - OTHER

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 23	JOHNSON	12- 58	0.0- 4.1	4.1	FAP-SP	2/64	75 7000	OUTER	10/75	14	31	2.9	10.53	4950
US 23	FLOYD	12- 36	22.5- 24.1	1.6	FAP-SP	2/64	75 7000	OUTER	10/75	7	30	5.8	10.01	4710
US 27	PULASKI	8-100	0.0- 6.9	6.9	FAP-SP	4/63	75 2950	OUTER	8/75	27	42	4.2	5.98	2660
US 27	PULASKI	8-100	10.9- 13.7	2.8	FAP-SP	4/61	75 12880	OUTER INNER	8/75 8/75	12 12	34 45	2.3 4.4	17.89 3.53	6850 1350
US 31WB	HARDIN	4- 47	0.0- 3.6	3.6	FAS-SS	11/74	75 8275	OUTER INNER	9/75 9/75	15 9	47 48	1.9 1.3	1.12 0.20	7340 1320
US 31W	HARDIN	4- 47	30.2- 33.0	2.8	FAP-SP	12/74	75 15240	OUTER INNER	9/75 9/75	10 11	46 48	3.6 2.1	1.61 0.52	11720 3800
US 41	HOPKINS	2- 54	29.6- 37.0	7.4	SP	2/64	75 7650	OUTER INNER	6/75 6/75	28 27	46 55	3.4 1.3	12.81 2.07	6180 1000
US 41	HOPKINS	2- 54	37.0- 45.6	8.6	SP	2/64	75 10905	OUTER INNER	6/75 6/75	34 35	41 55	4.8 1.3	14.39 2.69	6940 1300
US 60	HANCOCK	2- 46	0.0- 2.3	2.3	FAP-UN	12/69	75 3880	OUTER	9/75	9	50	2.4	4.26	4060
US 60 B	DAVIESS	2- 30	0.0- 4.5	4.5	SP	10/70	75 6213	OUTER INNER	7/75 7/75	19 18	45 52	4.6 1.8	3.99 0.49	4570 560
US 60	WOODFORD	7-120	0.0- 7.3	7.3	FAP-SP	12/60	75 7760	OUTER INNER	10/75 10/75	29 28	47 58	2.7 1.9	22.46 5.04	8270 1860
US 60 B	DAVIESS	2- 30	4.5- 10.2	5.7	SP	12/71	75 8760	OUTER INNER	7/75 7/75	21 19	42 51	3.4 3.9	4.61 0.83	6980 1250
US 60	DAVIESS	2- 30	22.9- 27.9	5.0	FAP-SP	12/69	75 4735	OUTER	9/75	21	51	2.9	5.83	5550
US 127	OWEN	6- 94	16.8- 20.1	3.3	FAS-SS	5/73	75 2820	OUTER	11/75	12	44	2.9	1.27	2820
US 127	OWEN	6- 94	20.1- 24.7	4.6	FAS-SS	5/73	75 1740	OUTER	11/75	19	46	2.9	0.78	1730
US 431	DAVIESS	2- 30	9.3- 12.2	2.9	SP	5/63	75 6770	OUTER	7/75	8	42	2.4	9.79	4390
US 460	SCOTT	7-105	9.3- 15.4	6.1	FAP-SS	7/67	75 1895	OUTER	10/75	24	48	3.5	2.51	1660

KENTUCKY ROCK ASPHALT SURFACE

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	PULASKI	8-100	21.3- 22.8	1.5	FAP-SP	10/68	75 8760	OUTER OUTER OUTER	40 25 55	9/75 9/75 9/75	9 11 11	50 60 43	2.4 2.3 4.5	6.89 6.89 6.89	5470 5470 5470
US 31E	BARREN	3- 5	16.4- 25.9	9.5	FAS-SS	7/67	75 2540	OUTER OUTER OUTER	40 25 55	11/75 11/75 11/75	34 22 22	54 62 50	2.0 2.5 2.0	4.16 4.16 4.16	2730 2730 2730
US 31E	HART	4- 50	0.0- 21.6	21.6	FAS-SS	7/67	75 1470	OUTER OUTER OUTER	40 25 55	11/75 11/75 11/75	71 15 15	55 61 51	2.2 2.9 2.0	2.62 2.62 2.62	1720 1720 1720
US 31E	NELSON (OVERLAID 9/78)	4- 90	15.7- 20.5	4.8	FAP-SP	8/67	75 5475	OUTER	40	11/75	19	48	2.3	7.91	5250
US 31W	WARREN (OVERLAID 11/77)	3-114	14.1- 20.5	6.4	FAS-SS	7/67	75 9573	OUTER OUTER OUTER INNER INNER INNER	40 25 55 40 25 55	8/75 8/75 8/75 8/75 8/75 8/75	11 12 11 11 10 11	53 63 41 56 67 49	3.4 4.5 6.5 3.4 2.3 4.9	11.24 11.24 11.24 2.24 2.24 2.24	7590 7590 7590 1510 1510 1510
US 41	HENDERSON	2- 51	8.4- 13.4	5.0	FAS-SS	11/66	75 6905	OUTER OUTER OUTER	40 25 55	6/75 6/75 6/75	19 21 10	53 62 43	2.4 2.2 2.5	10.58 10.58 10.58	6740 6740 6740
KY 54	DAVIESS (NOW KY 960, UNCLASSIFIED)	2- 30	24.0- 27.3	3.3	FAS-SS	10/67	75 3880	OUTER OUTER OUTER	40 25 55	7/75 7/75 7/75	11 10 10	46 56 41	2.4 2.7 1.7	6.49 6.49 6.49	4570 4570 4570
KY 54	OHIO	2- 92	0.0- 7.1	7.1	FAS-SS	10/67	75 2910	OUTER OUTER OUTER	40 25 55	7/75 7/75 7/75	27 24 24	48 59 41	2.8 2.0 2.2	2.71 2.71 2.71	1910 1910 1910
US 68	CHRISTIAN	2- 24	11.6- 21.1	9.5	FAP-SP	11/66	75 3100	OUTER OUTER OUTER	40 25 55	8/75 8/75 8/75	39 37 36	54 61 50	2.0 3.5 2.6	4.48 4.48 4.48	2800 2800 2800
KY 70	BARREN (OVERLAID 11/78)	3- 5	6.8- 15.4	8.6	FAS-SS	9/67	75 1195	OUTER OUTER OUTER	40 25 55	9/75 9/75 9/75	32 31 25	56 65 47	2.9 7.1 3.9	1.72 1.72 1.72	1180 1180 1180
US 79	TODD	3-110	4.0- 10.7	6.7	FAP-SP	8/67	75 1460	OUTER OUTER OUTER	40 25 55	8/75 8/75 8/75	21 21 21	55 63 49	3.8 1.5 5.3	1.96 1.96 1.96	1340 1340 1340

KENTUCKY ROCK ASPHALT SURFACE (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 80	ADAIR	8- 1	0.0- 11.8	11.8	FAS-SS	8/67	75 1085	OUTER	40	8/75	31	53	2.5	1.98	1350
								OUTER	25	8/75	28	61	1.3	1.98	1350
								OUTER	55	8/75	30	49	1.6	1.98	1350
KY 80	METCALF	3- 85	0.0- 7.9	7.9	FAS-SS	8/67	75 1145	OUTER	40	8/75	19	52	4.0	2.12	1450
								OUTER	25	8/75	17	60	4.2	2.12	1450
								OUTER	55	8/75	16	47	4.7	2.12	1450
KY 101	EDMONSON (OVERLAID 11/77)	3- 31	0.0- 4.1	4.1	FAP-SP	7/67	75 2236	OUTER	40	9/75	15	58	3.1	3.16	2120
								OUTER	25	9/75	10	63	3.4	3.16	2120
								OUTER	55	9/75	12	53	2.4	3.16	2120
KY 101	WARREN (OVERLAID 11/77)	3-114	11.6- 12.9	1.3	FAP-SP	7/67	75 2020	OUTER	40	9/75	4	59	0.8	2.59	1730
								OUTER	25	9/75	4	66	2.1	2.59	1730
								OUTER	55	9/75	2	50	0.0	2.59	1730
US 127	RUSSELL (OVERLAID 11/77)	8-104	8.1- 13.0	4.9	FAP-SP	6/67	75 1717	OUTER	40	11/75	18	52	2.2	3.00	1960
US 231	BUTLER	3- 16	0.0- 10.7	10.7	FAS-SS	7/68	75 3270	OUTER	40	8/75	41	53	4.6	4.29	3310
								OUTER	25	8/75	38	62	4.4	4.29	3310
								OUTER	55	8/75	36	47	3.6	4.29	3310
KY 259	EDMONSON	3- 31	9.2- 12.1	2.9	FAP-SP	7/67	75 1420	OUTER	40	9/75	13	59	1.7	1.82	1220
								OUTER	25	9/75	9	63	9.8	1.82	1220
								OUTER	55	9/75	6	52	0.7	1.82	1220
US 431	MC LEAN	2- 75	2.6- 6.1	3.5	FAP-SP	10/67	75 3350	OUTER	40	7/75	14	43	5.0	4.53	3190
								OUTER	25	7/75	14	55	2.9	4.53	3190
								OUTER	55	7/75	11	38	1.8	4.53	3190

SAND-ASPHALT SURFACE, TYPE I

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	CAMPBELL	6- 19	15.2- 16.4	1.2	FAP-SP	10/74	75 32500	OUTER	40	10/75	5	41	3.0	3.59	19370
	(97% NATURAL SAND, 3% MF)							OUTER	40	10/77	8	36	1.0	7.06	13050
	(OVERLAID AFTER 1979 TESTS)						77 12960	OUTER	40	10/79	8	36	1.4	10.47	11500
							75 32500	INNER	40	10/75	3	43	0.3	2.33	12580
								INNER	40	10/77	10	40	1.0	2.75	5080
							77 12960	INNER	40	10/79	7	42	2.5	3.55	3900
US 27	CAMPBELL	6- 19	18.6- 21.1	2.5	UR	10/74	75 32500	OUTER	40	10/75	4	40	0.9	3.59	20130
	(97% NATURAL SAND, 3% MF)							OUTER	40	10/77	14	35	2.6	10.54	19460
	(OVERLAID AFTER 1978 TESTS)						77 12960	OUTER	40	12/78	5	43	7.1	11.44	15100
							75 32500	INNER	40	10/74	7	41	6.2	0.0	12580
								INNER	40	10/75	5	44	1.5	2.33	12580
								INNER	40	10/77	13	37	2.9	6.96	12850
							77 12960	INNER	40	12/78	2	46	0.0	6.15	8100
US 45	FULTON	1- 38	0.3- 1.1	0.8	UR	7/77	77 7230	OUTER	40	10/77	5	40	1.4	0.35	7230
	(85% PIT SAND, 15% LIMESTONE SAND)							OUTER	40	7/78	7	34	2.5	1.65	9200
								OUTER	40	7/79	10	36	2.6	3.37	9000
US 45	GRAVES	1- 42	16.6- 17.7	1.1	UR	7/77	77 13430	OUTER	40	10/77	12	36	1.6	0.70	13430
	(85% PIT SAND, 15% LIMESTONE SAND)							OUTER	40	7/78	2	37	1.9	2.48	13700
	(BECAME ONE WAY, SOUTHBOUND, AFTER 1978 TESTS)							OUTER	40	8/79	5	32	3.0	5.11	13600
US 60	BOYD	9- 10	12.5- 13.3	0.8	UR	8/75	75 8750	OUTER	40	9/75	10	45	1.8	0.0	8750
	(84% NATURAL SAND, 12% SLAG, 4% MF)							OUTER	40	9/77	11	44	3.5	3.19	8750
							77 9630	OUTER	40	8/78	3	40	1.8	5.07	9200
US 60	BOYD	9- 10	13.3- 14.6	1.3	UR	8/75	75 8750	OUTER	40	9/75	7	43	1.3	0.0	8750
	(84% NATURAL SAND, 12% SLAG, 4% MF)							OUTER	40	9/77	6	45	3.3	3.19	8750
							77 8850	OUTER	40	8/78	4	40	3.9	4.84	8800
US 60	CRITTENDEN	1- 28	1.0- 4.9	3.9	FAP-SP	8/77	77 2540	OUTER	40	7/78	15	40	2.2	0.44	2500
	(75% NATURAL SAND, 21% LIMESTONE SAND, 4%MF)							OUTER	40	10/79	16	48	2.6	1.01	2500
US 60	FRANKLIN	5- 37	11.2- 12.1	0.9	UR	7/74	73 22180	OUTER	40	10/75	2	46	1.8	3.53	14920
	(75% NATURAL SAND, 25% LIMESTONE SAND)							OUTER	40	11/76	7	43	3.3	6.29	14990
								OUTER	40	12/77	10	46	1.7	9.48	15020
								INNER	40	10/75	4	47	0.8	1.63	6910
								INNER	40	11/76	8	50	3.4	2.93	6990
								INNER	40	12/77	14	46	3.5	4.48	7030
US 68	MARSHALL	1- 79	22.5- 25.9	3.4	FAP-SP	6/77	77 4210	OUTER	40	7/78	12	42	3.0	0.83	4200
								OUTER	40	8/79	13	37	3.7	1.65	4200
US 68	TRIGG	1-111	3.8- 6.3	2.5	FAP-SP	5/77	77 4950	OUTER	40	10/77	13	34	2.7	0.34	4950
	(75% NATURAL SAND, 25% LIMESTONE SAND)							OUTER	40	8/78	10	43	3.7	0.90	3900
								OUTER	40	8/79	10	38	4.4	1.60	3900
								OUTER	25	10/77	12	42	1.7	0.34	4950
								OUTER	55	10/77	13	27	3.8	0.34	4950

SAND-ASPHALT SURFACE, TYPE I (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 121	GRAVES	1- 42	9.7- 10.5	0.8	UR	5/75	75 12580	OUTER	40	10/77	10	34	2.1	5.54	12480
							77 13250	OUTER	40	7/78	7	36	3.5	7.39	12800
								OUTER	40	8/79	10	32	3.2	9.98	12900
KY 142	DAVIESS	2- 30	4.9- 5.5	0.6	RS	5/75	75 700	OUTER	40	10/77	9	48	1.3	0.31	690
							77 780	OUTER	40	6/79	9	48	1.1	0.55	700
							75 700	OUTER	25	10/77	7	59	0.9	0.31	690
								OUTER	55	10/77	11	38	2.5	0.31	690
KY 305	MC CRACKEN	1- 73	8.4- 9.4	1.0	UR	7/75	75 7090	OUTER	40	7/76	10	40	1.9	1.34	7090
								OUTER	40	10/77	10	34	3.6	2.90	7090
							77 5650	OUTER	40	7/78	2	37	4.0	3.51	6300
								OUTER	40	8/79	11	30	7.1	4.58	6200
KY 379	RUSSELL	8-104	18.8- 20.0	1.2	RS	11/76	77 3300	OUTER	40	9/78	6	30	1.5	1.12	3300
KY 448	MEADE	4- 82	3.2- 4.1	0.9	FAP-SS	10/74	75 3185	OUTER	40	9/75	6	42	1.6	0.52	3070
								OUTER	40	6/76	7	43	3.0	0.96	3120
								OUTER	40	6/77	10	32	2.3	1.55	3150
							77 2450	OUTER	40	11/78	7	41	1.1	2.11	2800
								OUTER	40	10/79	11	38	2.4	2.53	2800
							75 3185	OUTER	25	6/77	10	42	1.9	1.55	3150
KY 448	MEADE	4- 82	4.1- 6.2	2.1	FAP-SS	10/74		OUTER	55	6/77	8	23	3.2	1.55	3150
							73 4320	OUTER	40	11/74	9	43	2.4	0.10	6670
							75 4590	OUTER	40	9/75	8	42	4.2	0.76	4540
								OUTER	40	6/76	9	41	5.0	1.40	4560
								OUTER	40	6/77	10	31	4.6	2.26	4570
							77 2450	OUTER	40	11/78	7	41	3.1	2.69	3600
								OUTER	40	10/79	12	38	3.1	3.11	3400
							75 4590	OUTER	25	9/75	9	48	3.3	0.76	4540
								OUTER	25	6/77	10	39	4.8	2.26	4570
								OUTER	55	9/75	4	41	2.3	0.76	4540
EUCLID	FAYETTE	7- 34	0.0- 0.4	0.4	UR	8/74	73 15455	OUTER	40	8/74	6	34	2.0	0.04	15450
							77 15455	OUTER	40	11/79	4	38	0.6	14.16	15450
							73 15455	OUTER	25	8/74	10	43	3.2	0.04	15450
							77 15455	OUTER	25	11/79	5	50	2.8	14.16	15450

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG STD	NUMBER TRAFFIC DEV (MILLIONS)	EFFECTIVE AADT	
US 31W	MEADE	4- 82	0.8- 2.5	1.7	FAP-SP	10/72	71 15811	OUTER	40	6/74	10	36	2.8	3.15	10330
	(100% GREEN RIVER)							OUTER	40	7/74	10	41	4.3	3.35	10240
								OUTER	40	8/74	10	47	5.9	3.49	9820
								OUTER	40	9/74	9	48	3.6	3.65	10280
								OUTER	40	12/74	10	46	6.8	4.07	10290
							75 14150	OUTER	40	8/75	12	43	3.7	5.38	10370
								OUTER	40	6/76	12	46	2.2	7.05	10490
								OUTER	40	11/76	14	44	2.4	7.86	10530
								OUTER	40	6/77	12	42	2.8	9.07	10570
							77 13660	OUTER	40	11/78	8	47	2.8	11.74	10500
								OUTER	40	10/79	12	45	2.1	13.55	10600
							71 15811	OUTER	25	9/74	9	56	3.9	3.65	10280
								OUTER	25	12/74	10	62	3.1	4.07	10290
							75 14150	OUTER	25	8/75	10	53	2.0	5.38	10370
								OUTER	25	6/77	12	53	1.6	9.07	10570
							71 15811	OUTER	55	6/74	7	29	5.6	3.15	10330
								OUTER	55	7/74	9	29	2.8	3.35	10240
								OUTER	55	8/74	10	35	1.5	3.49	9820
								OUTER	55	9/74	10	39	2.8	3.65	10280
								OUTER	55	12/74	11	42	3.9	4.07	10290
							75 14150	OUTER	55	8/75	10	36	3.1	5.38	10370
								OUTER	55	6/77	11	31	2.1	9.07	10570
							71 15811	INNER	40	6/74	10	42	2.5	1.70	5570
								INNER	40	7/74	10	46	3.7	1.80	5500
								INNER	40	8/74	9	50	4.8	1.88	5290
								INNER	40	9/74	7	53	4.6	1.96	5520
								INNER	40	12/74	10	51	9.6	2.19	5540
							75 14150	INNER	40	8/75	11	50	3.3	2.68	5180
								INNER	40	6/76	12	52	2.3	3.19	4740
								INNER	40	11/76	15	51	2.7	3.43	4600
								INNER	40	6/77	12	48	2.1	3.80	4420
							77 13660	INNER	40	11/78	8	50	1.5	4.56	4100
								INNER	40	10/79	12	52	2.4	5.08	4000
							71 15811	INNER	25	9/74	7	58	7.3	1.96	5520
								INNER	25	12/74	10	64	4.7	2.19	5540
							75 14150	INNER	25	8/75	11	58	1.3	2.68	5180
								INNER	25	6/77	12	59	2.0	3.80	4420
							71 15811	INNER	55	6/74	9	33	2.6	1.70	5570
								INNER	55	7/74	10	39	3.9	1.80	5500
								INNER	55	8/74	10	41	3.2	1.88	5290
								INNER	55	9/74	10	42	2.4	1.96	5520
								INNER	55	12/74	11	43	2.4	2.19	5540
							75 14150	INNER	55	8/75	9	42	2.4	2.68	5180
								INNER	55	6/77	11	38	2.8	3.80	4420

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT	
US 31W	MEADE	4- 82	2.5-	3.8	1.3	FAP-SP	8/73	73 19900	OUTER	40	6/74	3	40	0.4	2.00	14550
		(100% GREEN RIVER)							OUTER	40	7/74	6	41	3.1	2.25	14330
		(OVERLAID 8/4/78)							OUTER	40	8/74	8	44	2.3	2.43	14250
									OUTER	40	9/74	7	42	4.1	2.63	14220
									OUTER	40	12/74	10	45	4.3	3.16	13860
							75 14150		OUTER	40	8/75	8	46	1.7	4.57	12460
									OUTER	40	6/76	7	49	2.4	6.24	11990
									OUTER	40	11/76	11	48	2.7	7.05	11850
									OUTER	40	6/77	9	41	3.3	8.26	11700
							73 19900		OUTER	25	9/74	6	57	2.2	2.63	14220
									OUTER	25	12/74	5	59	3.7	3.16	13860
							75 14150		OUTER	25	8/75	9	54	5.3	4.57	12460
									OUTER	25	6/77	10	55	3.2	8.26	11700
							73 19900		OUTER	55	6/74	4	29	0.9	2.00	14550
									OUTER	55	7/74	5	34	3.3	2.25	14330
									OUTER	55	8/74	6	38	3.9	2.43	14250
									OUTER	55	9/74	6	37	4.1	2.63	14220
									OUTER	55	12/74	10	41	2.9	3.16	13860
							75 14150		OUTER	55	8/75	7	34	3.4	4.57	12460
									OUTER	55	6/77	10	33	4.7	8.26	11700
							73 19900		INNER	40	6/74	3	48	1.3	1.08	7560
									INNER	40	7/74	5	47	2.5	1.21	7710
									INNER	40	8/74	6	49	3.1	1.31	7680
									INNER	40	9/74	6	50	1.5	1.41	7620
									INNER	40	12/74	10	51	6.9	1.70	7460
							75 14150		INNER	40	8/75	9	49	1.3	2.24	6120
									INNER	40	6/76	6	54	0.9	2.75	5280
									INNER	40	11/76	10	54	2.3	2.99	5030
									INNER	40	6/77	11	49	2.9	3.36	4750
							73 19900		INNER	25	9/74	5	60	2.4	1.41	7620
									INNER	25	12/74	5	61	6.4	1.70	7460
							75 14150		INNER	25	8/75	9	60	0.9	2.24	6120
									INNER	25	6/77	10	60	1.8	3.36	4750
							73 19900		INNER	55	6/74	3	33	0.7	1.08	7560
									INNER	55	7/74	4	35	2.2	1.21	7710
									INNER	55	8/74	7	44	2.9	1.31	7680
									INNER	55	9/74	5	45	6.6	1.41	7620
									INNER	55	12/74	9	47	4.2	1.70	7460
							75 14150		INNER	55	8/75	8	44	1.6	2.24	6120
									INNER	55	6/77	10	41	2.7	3.36	4750

SAND-ASPHALT SURFACE, SPECIAL PROVISION 59-B (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT	
US 31W	HARDIN	4- 47 (100% GREEN RIVER) (OVERLAID 8/4/78)	33.0- 37.1	4.1	FAP-SP	8/73	73 19900	OUTER	40	6/74	8	37	4.7	2.00	13110	
								OUTER	40	7/74	12	41	3.4	2.25	12890	
								OUTER	40	8/74	16	43	4.3	2.43	12930	
								OUTER	40	9/74	15	44	3.8	2.63	12990	
								OUTER	40	12/74	12	45	5.6	3.16	13000	
							75 14150	OUTER	40	8/75	18	42	5.2	4.57	12460	
								OUTER	40	6/76	18	46	4.8	6.24	11990	
								OUTER	40	11/76	22	49	2.3	7.05	11850	
								OUTER	40	6/77	20	40	4.5	8.26	11700	
								73 19900	OUTER	25	9/74	16	58	2.9	2.63	12990
							OUTER		25	12/74	7	59	5.4	3.16	13000	
							75 14150		OUTER	25	8/75	17	53	6.0	4.57	12460
									OUTER	25	6/77	16	52	3.3	8.26	11700
							73 19900		OUTER	55	6/74	8	29	4.6	2.00	13110
								OUTER	55	7/74	8	32	2.7	2.25	12890	
								OUTER	55	8/74	10	37	3.1	2.43	12930	
								OUTER	55	9/74	15	38	4.3	2.63	12990	
								OUTER	55	12/74	12	41	3.8	3.16	13000	
							75 14150	OUTER	55	8/75	18	36	5.4	4.57	12460	
								OUTER	55	6/77	15	33	4.5	8.26	11700	
								73 19900	INNER	40	6/74	8	42	3.2	1.08	7080
									INNER	40	7/74	12	47	4.3	1.21	6930
									INNER	40	8/74	16	48	2.6	1.31	6970
							INNER		40	9/74	16	47	3.4	1.41	6960	
							INNER		40	12/74	12	51	3.6	1.70	7000	
							75 14150	INNER	40	8/75	16	48	1.9	2.24	6120	
								INNER	40	6/76	15	53	1.3	2.75	5280	
								INNER	40	11/76	22	54	1.8	2.99	5030	
								INNER	40	6/77	20	49	2.4	3.36	4750	
								73 19900	INNER	25	9/74	16	58	2.4	1.41	6960
							INNER		25	12/74	7	61	1.2	1.70	7000	
							75 14150		INNER	25	8/75	16	59	1.5	2.24	6120
									INNER	25	6/77	16	58	6.1	3.36	4750
							73 19900		INNER	55	6/74	8	35	3.2	1.08	7080
								INNER	55	7/74	9	38	2.7	1.21	6930	
								INNER	55	8/74	8	43	2.3	1.31	6970	
								INNER	55	9/74	14	42	1.5	1.41	6960	
								INNER	55	12/74	12	43	1.7	1.70	7000	
							75 14150	INNER	55	8/75	15	44	2.2	2.24	6120	
								INNER	55	6/77	15	42	3.1	3.36	4750	

SAND-ASPHALT SURFACE, TYPE II (RURAL)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	BOURBON (100% SLAG)	7- 9	7.9- 8.8	0.9	FAP-SP	8/76	77 3390	OUTER	40	9/77	15	54	3.5	0.68	3000
									40	9/78	5	43	2.9	1.32	3000
									40	8/79	8	49	7.2	1.77	3300
									25	9/77	8	65	2.8	0.68	3000
									55	9/77	9	49	3.8	0.68	3000
									40	9/77	10	60	2.8	0.08	400
									40	9/78	6	46	7.1	0.15	400
									40	8/79	8	57	3.5	0.18	300
									25	9/77	11	64	2.5	0.08	400
									55	9/77	8	58	2.5	0.08	400
									INNER						
US 27	FAYETTE (OVERLAID - WINTER DAMAGED)	7- 34	3.5- 5.0	1.5	UN	10/77	75 32440	OUTER	40	10/77	17	61	3.5	0.0	18940
								INNER	40	10/77	16	65	3.0	0.0	13500
US 27	LINCOLN (100% SLAG)	8- 69	15.7- 16.5	0.8	FAP-SP	9/76	77 9100	OUTER	40	9/78	3	38	0.9	2.77	7600
								INNER	40	9/78	2	48	0.0	0.54	1500
KY 36	BREATHITT (100% SLAG)	10- 13	12.4- 14.8	2.4	FAS-SS	10/76	77 2540	OUTER	40	8/78	8	45	1.1	0.84	2600
KY 55	WASHINGTON (100% GREEN RIVER)	4-115	2.7- 4.8	2.1	FAP-SP	11/76	77 3110	OUTER	40	10/77	9	57	1.6	0.68	3110
								OUTER	40	8/78	12	48	3.0	1.14	3500
								OUTER	25	10/77	7	64	0.4	0.68	3110
								OUTER	55	10/77	6	53	0.9	0.68	3110
KY 57	FAYETTE (75% SLAG, 25% NATURAL SAND)	7- 34	3.0- 7.9	4.9	FAS-SS	6/77	75 1100	OUTER	40	10/77	19	72	4.8	0.07	1170
							77 1240	OUTER	40	10/79	20	58	2.3	0.54	1300
							75 1100	OUTER	25	10/77	18	75	2.6	0.07	1170
								OUTER	55	10/77	13	70	3.3	0.07	1170
KY 61	BULLITT (80% GREEN RIVER, 20% MORTAR)	5- 15	14.1- 15.0	0.9	FAS-SS	8/77	77 6800	OUTER	40	10/78	7	43	3.4	1.48	6800
								OUTER	40	10/79	8	48	4.2	2.34	6000
KY 61	HARDIN (100% GREEN RIVER)	4- 47	0.0- 4.3	4.3	FAP-SP	7/75	75 9450	OUTER	40	11/75	16	39	2.9	0.63	10560
								OUTER	40	11/76	13	46	3.3	2.35	9720
								OUTER	40	6/77	16	43	5.9	3.44	9640
							77 8590	OUTER	40	9/78	17	55	9.7	5.28	9100
							75 9450	OUTER	25	6/77	25	49	7.2	3.44	9640
								OUTER	55	6/77	7	29	7.3	3.44	9640
KY 61	LARUE (100% GREEN RIVER)	4- 62	8.9- 13.2	4.3	FAP-SP	7/75	75 6710	OUTER	40	11/75	17	42	3.6	0.45	7500
								OUTER	40	11/76	17	51	3.5	1.67	6900
								OUTER	40	6/77	17	47	1.7	2.45	6840
							77 8520	OUTER	40	9/78	18	45	3.8	4.51	7800
							75 6710	OUTER	25	6/77	17	59	2.1	2.45	6840
								OUTER	55	6/77	16	38	4.2	2.45	6840
US 62	HARRISON (100% SLAG)	6- 49	5.8- 9.1	3.3	FAS-SS	10/75	75 2980	OUTER	40	10/77	15	52	1.9	1.06	2960
							77 2990	OUTER	40	9/78	13	50	1.8	1.57	3000
								OUTER	40	6/79	13	56	3.2	2.00	3000
							75 2980	OUTER	25	10/77	14	62	1.5	1.06	2960
								OUTER	55	10/77	14	45	2.0	1.06	2960

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME		LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	NUMBER			CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT								
							SKID AVG	STD DEV					DEV												
US 68	CHRISTIAN (80% SLAG, 20% NATURAL SAND)	2- 24	0.0- 8.7	8.7	FAP-SP	7/75	73	4140	OUTER	40	12/75	35	48	2.3	0.32	4140									
									OUTER	40	10/77	35	51	2.3	1.68	4140									
							77	3730	OUTER	40	8/78	34	52	3.2	2.21	3900									
									OUTER	40	10/79	35	49	4.4	2.99	3900									
							73	4140	OUTER	25	12/75	34	56	2.2	0.32	4140									
									OUTER	25	10/77	32	62	1.9	1.68	4140									
									OUTER	55	12/75	17	44	2.7	0.32	4140									
									OUTER	55	10/77	33	42	4.0	1.68	4140									
US 68	LOGAN (100% GREEN RIVER)	3- 71	0.0- 9.7	9.7	FAP-SP	10/75	75	2820	OUTER	40	11/76	32	48	1.3	0.57	2900									
									OUTER	40	7/77	40	48	2.2	0.91	2870									
							77	2320	OUTER	40	7/78	38	54	3.2	1.30	2600									
									OUTER	40	10/79	38	58	2.6	1.83	2500									
							75	2820	OUTER	25	7/77	40	55	2.8	0.91	2870									
									OUTER	55	7/77	40	42	3.4	0.91	2870									
									US 68	TODD (100% GREEN RIVER)	3-110	12.1- 14.1	2.0	FAP-SP	10/75	75	3100	OUTER	40	11/76	9	48	1.3	0.70	3100
																		OUTER	40	7/77	9	48	1.2	1.08	3100
77	2230	OUTER	40	7/78	11	54	2.6	1.40								2600									
		OUTER	40	10/79	10	58	1.8	1.92								2500									
75	3100	OUTER	25	7/77	9	56	0.8	1.08								3100									
		OUTER	55	7/77	10	43	1.9	1.08								3100									
		US 68	TRIGG (80% SLAG, 20% NATURAL SAND)	1-111	19.0- 28.2	9.2	FAP-SP	8/75								75	4270	OUTER	40	12/75	32	47	4.7	0.29	4750
																		OUTER	40	8/76	34	43	10.5	0.84	4430
77	4700								OUTER	40	10/77	39	46	7.8	1.70	4350									
									OUTER	40	8/78	40	45	9.8	2.51	4600									
75	4270								OUTER	40	10/79	37	48	8.9	3.49	4600									
									OUTER	25	12/75	32	55	3.5	0.29	4750									
									OUTER	25	10/77	37	55	8.6	1.70	4350									
									OUTER	55	12/75	21	41	3.2	0.29	4750									
KY 245	BULLITT (100% GREEN RIVER)	5- 15	3.5- 4.3	0.8	FAS-SS	7/75	75	2780	OUTER	40	7/77	9	53	2.3	1.01	2780									
									OUTER	40	10/78	3	51	0.0	2.05	3500									
							77	4050	OUTER	40	7/79	10	55	2.6	2.62	3600									
									OUTER	25	7/77	9	62	1.3	1.01	2780									
							75	2780	OUTER	55	7/77	10	45	1.2	1.01	2780									
									KY 555	WASHINGTON (100% GREEN RIVER)	4-115	0.0- 4.8	4.8	FAP-SP	11/76	75	1390	OUTER	40	10/77	20	60	2.3	0.25	1440
																		OUTER	40	8/78	21	52	2.6	0.54	1600
																77	1640	OUTER	25	10/77	19	65	2.3	0.25	1440
OUTER	55	10/77	17	55	2.1	0.25	1440																		
75	1390	OUTER	40	11/78	24	49	5.3	1.82								4300									

SAND-ASPHALT SURFACE, TYPE II (URBAN)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	PULASKI (80% SLAG, 20% GREEN RIVER)	8-100	15.6- 16.8	1.2	UR	11/76	75 12880	OUTER	40	7/77	7	21	3.1	1.19	9930
							77 17580	OUTER	40	9/78	6	17	2.7	4.30	12900
							75 12880	OUTER	25	7/77	7	34	6.6	1.19	9930
								OUTER	55	7/77	3	11	3.3	1.19	9930
								INNER	40	7/77	6	33	3.6	0.33	2730
							77 17580	INNER	40	9/78	5	26	1.4	1.64	4900
							75 12880	INNER	25	7/77	6	45	3.8	0.33	2730
								INNER	55	7/77	3	21	3.1	0.33	2730
US 45	MC CRACKEN (80% SLAG, 20% NATURAL SAND)	1- 73	10.4- 12.2	1.8	FAS-UR	6/75	75 16000	OUTER	40	6/75	9	30	1.6	0.0	16000
								OUTER	40	7/76	8	30	3.9	2.39	11700
								OUTER	40	10/77	10	27	4.3	5.47	12890
							77 11320	OUTER	40	7/78	6	32	5.2	6.16	11000
								OUTER	40	8/79	11	26	4.7	7.95	10500
							75 16000	INNER	40	6/75	10	32	2.3	0.0	16000
								INNER	40	7/76	9	34	4.1	0.81	3980
								INNER	40	10/77	10	30	3.0	1.53	3930
							77 11320	INNER	40	7/78	7	32	3.3	2.01	3600
US 60	CRITTENDEN (100% SLAG) (OVERLAID AFTER 1978 TESTS)	1- 28	8.2- 9.2	1.0	FAP-UR	6/75	75 3970	OUTER	40	7/76	5	25	4.5	0.78	3840
								OUTER	40	10/77	9	28	1.2	1.67	3910
							77 3390	OUTER	40	7/78	3	26	4.8	2.07	3600
US 60	FRANKLIN (100% GREEN RIVER) (OVERLAID IN 1978)	5- 37	7.1- 8.2	1.1	UR	10/74	75 7450	OUTER	40	11/76	7	43	5.3	2.38	6370
								OUTER	40	12/77	10	51	3.5	3.73	6380
								INNER	40	11/76	3	54	2.1	0.39	1040
								INNER	40	12/77	5	54	2.2	0.61	1040
US 60	MC CRACKEN (80% SLAG, 20% NATURAL SAND)	1- 73	14.4- 16.5	2.1	UR	6/75	75 15500	OUTER	40	6/75	10	35	2.3	0.0	11540
								OUTER	40	10/77	14	28	3.1	4.90	11540
							77 29930	OUTER	40	7/78	9	26	3.9	8.52	15000
								OUTER	40	8/79	8	27	5.2	12.01	15900
							75 15500	INNER	40	6/75	10	39	1.8	0.0	3810
								INNER	40	10/77	14	41	4.0	1.62	3810
							77 29930	INNER	40	7/78	10	39	5.8	4.35	7700
								INNER	40	8/79	8	38	5.6	6.52	8600
US 60	MC CRACKEN (80% SLAG, 20% NATURAL SAND) (EB LANES ONLY)	1- 73	18.7- 19.5	0.8	UR	6/75	75 20660	OUTER	40	6/75	4	34	2.4	0.0	20660
								OUTER	40	7/76	3	41	3.3	2.87	14080
								OUTER	40	10/77	5	31	1.6	6.04	14220
							77 24840	OUTER	40	8/79	5	29	6.1	11.73	15500
							75 20660	INNER	40	6/75	4	38	1.1	0.00	20660
								INNER	40	7/76	3	50	1.3	1.26	6180
								INNER	40	10/77	5	40	4.2	2.65	6240
							77 24840	INNER	40	8/79	5	37	5.2	5.81	7700

SAND-ASPHALT SURFACE, TYPE II (URBAN) (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 94	CALLOWAY	1- 18 (70% GRAVEL, 30% LIMESTONE SAND)	9.2- 10.5	1.3	UR	8/75	75 6580	OUTER	40	7/76	2	28	2.1	1.20	6580
								OUTER	40	10/77	15	27	3.0	2.60	6580
							77 3460	OUTER	40	7/78	8	28	4.6	2.63	5000
								OUTER	40	8/79	10	27	4.6	3.31	4600
KY1683	FAYETTE	7- 34 (75% SLAG, 25% NATURAL SAND)	0.0- 1.0	1.0	UR	8/77	75 7160	OUTER	40	10/77	10	45	1.9	0.16	5750
KY1974	FAYETTE	7- 34 (75% SLAG, 25% NATURAL SAND)	11.3- 12.0	0.7	UR	8/77	75 25310	OUTER	40	10/77	10	42	5.3	0.53	18650
								OUTER	25	10/77	10	51	4.3	0.53	18650

OPEN-GRADED FRICTION COURSE, TYPE 1 (ALL GREEN RIVER OR WITH LIMESTONE)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT - TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	MC CREARY	8- 74	0.0- 4.6	4.6	FAP-SP	7/76	75 3100	OUTER	40	6/77	20	53 2.0	0.54	3220
	(97% GREEN RIVER, 3% MF)							OUTER	40	12/77	17	50 2.0	0.82	3180
							77 3440	OUTER	40	9/78	18	49 1.6	1.35	3400
							75 3100	OUTER	25	6/77	16	55 8.0	0.54	3220
								OUTER	55	6/77	17	51 1.8	0.54	3220
								OUTER	55	12/77	17	47 2.3	0.82	3180
US 31W	HARDIN	4- 47	18.1- 22.9	4.8	FAP-SP	10/73	73 16750	OUTER	40	6/74	10	46 2.8	1.36	10920
	(100% GREEN RIVER)							OUTER	40	7/74	10	44 2.3	1.58	10590
	(ABOUT 30 % PATCHED IN 1979)							OUTER	40	8/74	9	50 4.7	1.73	10950
	(SOUTHBOUND)							OUTER	40	9/74	10	49 2.9	1.89	10960
								OUTER	40	12/74	10	52 4.5	2.35	11000
							75 16750	OUTER	40	7/75	2	51 1.0	3.73	11470
								OUTER	40	9/75	11	51 3.0	4.04	11540
								OUTER	40	4/76	12	51 2.6	5.38	11730
								OUTER	40	6/76	11	57 1.5	5.77	11770
								OUTER	40	11/76	9	53 4.6	6.69	11840
								OUTER	40	6/77	11	55 2.4	8.05	11930
							77 18330	OUTER	40	11/78	6	55 1.7	11.49	12400
								OUTER	40	10/79	10	54 2.4	13.75	12500
							73 16750	OUTER	25	12/74	10	55 6.7	2.35	11000
							75 16750	OUTER	25	9/75	8	61 0.7	4.04	11540
								OUTER	25	4/76	11	59 3.3	5.38	11730
								OUTER	25	6/77	11	63 0.9	8.05	11930
							73 16750	OUTER	55	6/74	9	41 2.5	1.36	10920
								OUTER	55	7/74	9	42 4.7	1.58	10590
								OUTER	55	8/74	10	49 2.6	1.73	10950
								OUTER	55	9/74	11	45 3.2	1.89	10960
								OUTER	55	12/74	10	47 3.4	2.35	11000
							75 16750	OUTER	55	7/75	7	49 2.0	3.73	11470
								OUTER	55	9/75	8	49 1.7	4.04	11540
								OUTER	55	4/76	11	47 7.7	5.38	11730
								OUTER	55	6/77	11	47 3.5	8.05	11930
							73 16750	INNER	40	6/74	10	44 2.1	0.74	5140
								INNER	40	7/74	10	44 5.0	0.85	5880
								INNER	40	8/74	11	47 2.6	0.93	5890
								INNER	40	9/74	10	47 1.6	1.02	5910
								INNER	40	12/74	10	50 3.8	1.27	5950
							75 16750	INNER	40	7/75	5	46 4.2	1.21	3710
								INNER	40	9/75	8	50 0.9	1.32	3760
								INNER	40	4/76	12	52 2.9	1.79	3910
								INNER	40	6/76	11	55 2.4	1.93	3940
								INNER	40	11/76	10	54 2.0	2.26	4000
								INNER	40	6/77	10	55 1.4	2.75	4070
							77 18330	INNER	40	11/78	6	57 0.8	4.13	4400
								INNER	40	10/79	10	58 1.9	5.01	4500

OPEN-GRADED FRICTION COURSE, TYPE 1 (ALL GREEN RIVER OR WITH LIMESTONE) (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 31W	HARDIN (CONTINUED)	4- 47	18.1- 22.9	4.8	FAP-SP	10/73	73 16750	INNER	25	12/74	10	54 2.7	1.27	5950
							75 16750	INNER	25	9/75	8	54 1.0	1.32	3760
								INNER	25	4/76	13	57 3.4	1.79	3910
								INNER	25	6/77	10	62 1.4	2.75	4070
							73 16750	INNER	55	6/74	9	41 2.0	0.74	5140
								INNER	55	7/74	11	43 4.6	0.85	5880
								INNER	55	8/74	10	48 5.6	0.93	5890
								INNER	55	9/74	12	44 2.1	1.02	5910
								INNER	55	12/74	10	44 4.1	1.27	5950
							75 16750	INNER	55	7/75	5	48 3.3	1.21	3710
								INNER	55	9/75	8	47 1.7	1.32	3760
								INNER	55	4/76	10	51 2.8	1.79	3910
								INNER	55	6/77	10	49 2.7	2.75	4070
US 31W	HARDIN (98% GREEN RIVER, 2% MF TYPE 1A) (70% CRUSHED ON ONE FACE) (NOT USED IN ANALYSIS) (NORTHBOUND)	4- 47	18.3- 20.4	2.1	FAP-SP	10/76	75 13920	OUTER	40	11/76	6	40 0.6	0.14	10740
								OUTER	40	6/77	6	47 2.2	1.37	10740
							77 19730	OUTER	40	11/78	4	57 1.6	5.20	13600
								OUTER	40	10/79	6	58 1.4	7.58	13700
							75 13920	OUTER	25	11/76	5	46 2.3	0.14	10740
								OUTER	25	6/77	4	57 0.9	1.37	10740
								OUTER	55	11/76	3	38 0.6	0.14	10740
								OUTER	55	6/77	5	44 2.8	1.37	10740
								INNER	40	11/76	4	39 1.3	0.04	3180
								INNER	40	6/77	5	45 0.7	0.41	3180
							77 19730	INNER	40	11/78	4	55 1.5	2.13	5600
								INNER	40	10/79	6	58 4.8	3.13	5600
							75 13920	INNER	25	11/76	3	45 0.0	0.04	3180
								INNER	25	6/77	5	51 2.2	0.41	3180
								INNER	55	11/76	5	39 0.8	0.04	3180
								INNER	55	6/77	5	42 2.1	0.41	3180
KY 55	TAYLOR (60% GREEN RIVER, 40% LIMESTONE)	4-109	4.8- 10.0	5.2	FAP-SP	9/78	77 3760	OUTER	40	9/78	19	36 2.5	0.0	3800
US 62	GRAYSON (98% GREEN RIVER, 2% MF)	4- 43	25.9- 29.0	3.1	FAS-SS	7/75	75 2700	OUTER	40	9/75	15	44 1.4	0.09	2700
								OUTER	40	6/76	13	45 1.6	0.47	2700
								OUTER	40	11/76	13	44 2.4	0.66	2700
								OUTER	40	6/77	14	55 2.3	0.96	2700
							77 2770	OUTER	40	9/78	13	50 1.4	1.59	2700
								OUTER	40	7/79	12	56 1.1	1.99	2700
							75 2700	OUTER	25	9/75	12	48 1.7	0.09	2700
								OUTER	25	6/77	13	60 2.1	0.96	2700
								OUTER	55	9/75	9	42 1.3	0.09	2700
								OUTER	55	6/77	11	52 2.6	0.96	2700

OPEN-GRADED FRICTION COURSE, TYPE 1 (ALL GREEN RIVER OR WITH LIMESTONE) (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 62	GRAYSON	4- 43	29.0- 31.0	2.0	FAS-SS	7/75	75 2460	OUTER	40	9/75	7	46 1.4	0.08	2460
	(50% GREEN RIVER, 48% LIMESTONE, 2% MF)		(HIGH CARBONATE)					OUTER	40	6/76	9	46 2.3	0.42	2460
								OUTER	40	11/76	13	41 3.1	0.60	2460
								OUTER	40	6/77	10	52 2.2	0.88	2460
							77 2660	OUTER	40	9/78	8	45 2.7	1.49	2600
								OUTER	40	7/79	10	49 2.8	1.88	2600
							75 2460	OUTER	25	9/75	5	50 1.7	0.08	2460
								OUTER	25	6/77	10	56 3.2	0.88	2460
								OUTER	55	9/75	8	45 1.5	0.08	2460
								OUTER	55	6/77	10	48 2.2	0.88	2460
US 62	GRAYSON	4- 43	31.0- 33.5	2.5	FAS-SS	7/75	75 2220	OUTER	40	9/75	9	44 1.4	0.07	2220
	(50% GREEN RIVER, 48% LIMESTONE, 2% MF)		(LOW CARBONATE, HIGH INSOLUBLE)					OUTER	40	6/76	11	47 1.4	0.38	2220
								OUTER	40	11/76	10	42 2.5	0.55	2220
								OUTER	40	6/77	11	54 1.8	0.79	2220
							77 2520	OUTER	40	9/78	10	46 0.9	1.38	2400
								OUTER	40	7/79	11	51 1.8	1.74	2400
							75 2220	OUTER	25	9/75	9	49 1.2	0.07	2220
								OUTER	25	6/77	11	58 1.1	0.79	2220
								OUTER	55	9/75	9	42 1.1	0.07	2220
								OUTER	55	6/77	11	48 1.8	0.79	2220
US 62	HARDIN	4- 47	20.1- 21.2	1.1	FAS-SS	10/76	75 5130	OUTER	40	11/76	6	39 1.2	0.07	5130
	(70% GREEN RIVER, 30% LIMESTONE)							OUTER	40	11/76	14	40 0.9	0.09	5130
								OUTER	40	6/77	11	46 1.5	0.65	5130
							77 3770	OUTER	40	11/78	12	46 2.3	1.50	3900
								OUTER	40	7/79	12	50 1.2	1.93	3900
							75 5130	OUTER	25	6/77	12	53 2.2	0.65	5130
								OUTER	55	6/77	12	43 1.7	0.65	5130
US 62	HARDIN	4- 47	21.2- 22.4	1.2	FAS-SS	10/76	75 3905	OUTER	40	11/76	8	40 3.9	0.05	3900
	(40% GREEN RIVER, 60% LIMESTONE)							OUTER	40	11/76	16	40 2.0	0.07	3900
								OUTER	40	6/77	11	45 1.1	0.50	3900
							77 3480	OUTER	40	11/78	11	42 1.7	1.35	3500
								OUTER	40	7/79	12	45 1.4	1.74	3500
							75 3905	OUTER	25	6/77	12	52 2.6	0.50	3900
								OUTER	55	6/77	11	42 1.3	0.50	3900
US 62	HARDIN	4- 47	22.4- 23.6	1.2	FAS-SS	10/76	75 2680	OUTER	40	11/76	12	42 1.4	0.04	2680
	(100% GREEN RIVER)							OUTER	40	11/76	13	42 0.9	0.05	2680
								OUTER	40	6/77	12	47 1.4	0.34	2680
							77 2670	OUTER	40	11/78	10	51 1.9	1.02	2600
								OUTER	40	7/79	12	55 1.5	1.32	2700
							75 2680	OUTER	25	6/77	12	55 2.0	0.34	2680
								OUTER	55	6/77	11	45 1.6	0.34	2680

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9065	BULLITT	5-15	116.6-116.9	0.3	INTER	3/76	75 25700	OUTER	40	11/76	8	53	2.6	1.93	15980
								OUTER	40	6/77	4	48	1.3	3.85	16320
								OUTER	40	7/79	9	40	2.7	11.82	19400
								OUTER	25	11/76	6	54	1.6	1.93	15980
								OUTER	25	6/77	8	54	3.9	3.85	16320
								OUTER	55	11/76	4	56	1.4	1.93	15980
								OUTER	55	6/77	4	47	0.9	3.85	16320
								INNER	40	11/76	8	49	0.9	1.04	8660
								INNER	40	6/77	6	49	0.9	2.09	8840
								INNER	40	7/79	7	44	1.6	7.92	13000
								INNER	25	11/76	6	53	0.9	1.04	8660
								INNER	25	6/77	10	55	1.2	2.09	8840
								INNER	55	11/76	4	50	1.4	1.04	8660
								INNER	55	6/77	5	45	1.9	2.09	8840
I 9065	HARDIN	4-47	91.5-91.7	0.2	INTER	3/76	75 22900	OUTER	40	11/76	8	47	0.8	1.78	14780
								OUTER	40	10/77	8	49	2.0	4.30	15150
								OUTER	25	11/76	8	52	1.0	1.78	14780
								OUTER	25	10/77	9	54	1.9	4.30	15150
								OUTER	55	11/76	5	46	1.8	1.78	14780
								OUTER	55	10/77	5	47	1.1	4.30	15150
								INNER	40	11/76	8	46	1.4	0.86	7170
								INNER	40	10/77	8	48	0.4	2.09	7350
								INNER	25	11/76	8	49	0.9	0.86	7170
								INNER	25	10/77	8	52	0.6	2.09	7350
								INNER	55	11/76	4	45	1.0	0.86	7170
								INNER	55	10/77	5	45	1.6	2.09	7350

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 2	GREENUP (97% SLAG, 3% FLY ASH)	9- 45	0.0- 6.3	6.3	FAS-SS	8/74	73 920	OUTER	40	9/74	25	50 3.1	0.01	400
								OUTER	40	11/74	14	50 4.5	0.04	830
							75 680	OUTER	40	5/75	22	51 2.4	0.10	700
								OUTER	40	9/76	26	50 3.8	0.26	690
								OUTER	40	9/77	24	54 3.8	0.38	680
							73 920	OUTER	25	9/74	26	63 4.5	0.01	400
							75 680	OUTER	25	9/77	24	59 2.8	0.38	680
							73 920	OUTER	55	9/74	34	41 2.8	0.01	400
							75 680	OUTER	55	9/77	25	51 3.5	0.38	680
KY 7	GREENUP (97% SLAG, 3% FLY ASH)	9- 45	0.0- 5.7	5.7	FAS-SS	8/74	73 1131	OUTER	40	9/74	22	48 2.1	0.01	1040
								OUTER	40	11/74	14	47 2.4	0.05	1040
							75 785	OUTER	40	5/75	22	51 2.5	0.10	750
								OUTER	40	9/75	46	50 2.6	0.16	760
								OUTER	40	9/76	23	52 3.8	0.29	770
								OUTER	40	9/77	22	59 3.9	0.43	800
							73 1131	OUTER	25	9/74	21	64 3.3	0.01	1040
							75 785	OUTER	25	9/75	44	55 2.6	0.16	760
								OUTER	25	9/77	22	62 5.9	0.43	800
							73 1131	OUTER	55	9/74	25	43 2.4	0.01	1040
							75 785	OUTER	55	9/75	48	45 2.9	0.16	760
								OUTER	55	9/77	23	55 5.1	0.43	800
KY 7	GREENUP (97% SLAG, 3% MF)	9- 45	12.9- 20.0	7.1	FAS-SS	10/75	75 2430	OUTER	40	9/75	10	44 6.5	0.0	2430
								OUTER	40	9/76	26	46 3.6	0.41	2520
								OUTER	40	9/77	27	48 3.9	0.86	2470
							77 1270	OUTER	40	8/78	26	43 3.1	0.93	1800
							75 2430	OUTER	25	9/77	27	50 4.1	0.85	2470
								OUTER	55	9/77	28	46 3.2	0.86	2470
KY 10	CAMPBELL (100% SLAG)	6- 19	0.0- 1.4	1.4	FAS-SS	8/75	75 2220	OUTER	40	10/75	9	44 3.3	0.07	2050
								OUTER	40	8/76	19	52 2.4	0.40	2190
							77 1110	OUTER	40	10/79	10	49 3.3	1.11	1500
							75 2220	OUTER	25	10/75	10	50 3.6	0.07	2050
KY 10	LEWIS (97% SLAG, 3% MF)	9- 68	29.5- 39.2	9.7	FAP-SP	8/76	75 2040	OUTER	40	9/77	39	50 3.9	0.39	1990
							77 2470	OUTER	40	8/78	37	47 2.0	0.87	2400
							75 2040	OUTER	25	9/77	38	54 3.5	0.39	1990
								OUTER	55	9/77	38	50 3.5	0.39	1990
US 25	MADISON (97% SLAG, 3% MF)	7- 76	12.1- 15.3	3.2	FAP-SS	10/76	75 8680	OUTER	40	10/76	13	46 1.1	0.0	4560
								OUTER	40	12/77	19	55 1.4	1.91	8960
							77 10540	OUTER	40	10/78	14	47 2.8	3.85	10500
							75 8680	OUTER	25	10/76	14	53 0.8	0.0	4560
								OUTER	25	12/77	13	62 2.1	1.91	8960
								OUTER	55	10/76	12	43 1.0	0.0	4560
								OUTER	55	12/77	15	50 2.2	1.91	8960

OPEN-GRADED FRICTION COURSE, TYPE 1 (SLAG AGGREGATE) (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 60	BOYD	9- 10 (97% SLAG, 3% FLY ASH)	0.5- 4.2	3.7	FAS-SS	10/74	73 3770	OUTER	40	11/74	11	48 3.7	0.0	3770
							75 5320	OUTER	40	9/75	16	52 0.9	0.90	5160
								OUTER	40	9/76	15	48 4.4	1.81	5240
								OUTER	40	9/77	16	44 3.2	2.79	5270
							77 6150	OUTER	40	8/78	13	46 5.2	3.95	5600
							73 3770	OUTER	25	11/74	11	61 5.3	0.0	3770
							75 5320	OUTER	25	9/75	14	55 1.8	0.90	5160
								OUTER	25	9/77	14	52 2.6	2.79	5270
							73 3770	OUTER	55	11/74	11	45 6.4	0.0	3770
							75 5320	OUTER	55	9/75	13	49 2.6	0.90	5160
								OUTER	55	9/77	16	41 4.4	2.79	5270
US 62	MUHLENBERG	2- 89 (97% STEEL SLAG, 3% MF)	4.2- 9.0	4.8	FAS-SS	9/76	75 2995	OUTER	40	11/76	19	46 1.8	0.03	3900
								OUTER	40	10/77	23	50 3.0	0.53	1720
							77 3530	OUTER	40	8/78	20	45 1.9	1.15	3500
								OUTER	40	10/79	18	53 4.0	1.92	3500
							75 2995	OUTER	25	10/77	25	57 3.6	0.53	1720
								OUTER	55	10/77	22	45 3.2	0.53	1720
KY 180	BOYD	9- 10 (97% SLAG, 3% FLY ASH)	0.9- 2.5	1.6	FAP-SP	10/75	75 6185	OUTER	40	9/75	7	49 6.6	0.0	7970
								OUTER	40	8/76	7	53 1.0	0.83	5310
								OUTER	40	9/77	6	45 4.8	1.86	5389
							77 7390	OUTER	40	8/78	9	56 2.8	3.05	5900
							75 6185	INNER	40	9/75	6	58 2.7	0.0	1100
								INNER	40	8/76	6	54 2.1	0.11	730
								INNER	40	9/77	7	52 4.4	0.26	740
							77 7390	INNER	40	8/78	5	58 1.3	0.47	900
I 9024	MARSHALL	1- 79 (97% STEEL SLAG, 3% MF)	22.0- 26.5	4.5	INTER	10/77	77 7620	OUTER	40	10/77	33	41 2.9	0.0	6500
								OUTER	40	7/78	33	45 2.0	0.89	6500
								OUTER	40	8/79	34	39 4.0	2.17	6500
								INNER	40	10/77	17	42 2.5	0.0	1100
								INNER	40	7/78	33	52 2.6	0.15	1100
								INNER	40	8/79	16	48 2.0	0.36	1100
I 9075	KENTON	6- 59 (97% SLAG, 3% MF)	184.7-185.4	0.7	INTER	9/76	75 78770	OUTER	40	7/77	8	48 2.1	2.47	15750
							77 81580	OUTER	40	9/79	5	46 7.7	8.99	16300
							75 78770	MIDDLE	40	7/77	10	46 3.7	4.93	31510
							77 81580	MIDDLE	40	9/79	2	48 0.0	17.97	32500
							75 78770	INNER	40	7/77	10	43 3.1	4.93	31510
							77 81580	INNER	40	9/79	3	53 0.6	17.97	32500

OPEN-GRADED FRICTION COURSE, TYPE 1 (SLAG AGGREGATE) (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9075	KENTON	6- 59	188.6-190.5	1.9	INTER	11/76	75109020	OUTER	40	5/77	19	49 2.7	2.09	21800
	(87% SLAG, 10% SAND, 3% FLY ASH)							OUTER	40	7/77	8	48 1.7	2.75	21300
	(NB LANES)						77 94950	OUTER	40	9/79	8	41 3.4	9.98	19100
							75109020	OUTER	55	5/77	16	49 3.6	2.09	21800
								MIDDLE	40	5/77	19	43 4.6	4.19	43610
								MIDDLE	40	7/77	8	42 4.5	5.49	43610
							77 94950	MIDDLE	40	9/79	4	36 5.3	19.95	38200
							75109020	MIDDLE	55	5/77	17	48 4.5	4.19	43610
								INNER	40	5/77	18	48 3.9	4.19	43610
								INNER	40	7/77	10	45 4.8	5.49	43610
							77 94950	INNER	40	9/79	4	46 4.1	19.95	38200
							75109020	INNER	55	5/77	19	52 3.9	4.19	43610

OPEN-GRADED FRICTION COURSE, TYPE 1 (GRAVEL OR GRAVEL AND LIMESTONE)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 11	MASON (100% GRAVEL)	9- 81	0.0- 4.1	4.1	FAP-SP	10/76	75 2460	OUTER	40	9/77	15	57	1.3	0.41	2540
							77 3120	OUTER	40	11/78	16	51	4.4	1.20	3100
								OUTER	40	10/79	16	55	1.7	1.68	3100
							75 2460	OUTER	25	9/77	14	61	2.0	0.41	2540
US 51	BALLARD (100% MISSISSIPPI RIVER GRAVEL) (NO MORE TESTS TO BE MADE)	1- 4	6.0- 6.3	0.3	FAP-SP	6/74	73 7290	OUTER	40	7/74	10	47	3.4	0.17	7560
							75 6550	OUTER	40	6/75	7	44	2.5	1.24	7000
								OUTER	40	7/76	6	37	0.9	2.59	6760
							73 7290	OUTER	25	7/74	10	50	2.7	0.17	7560
							75 6550	OUTER	25	6/75	8	49	2.7	1.24	7000
							73 7290	OUTER	55	7/74	10	44	1.9	0.17	7560
US 68	MARSHALL (OVERLAID)	1- 79	0.0- 3.1	3.1	FAP-SP	10/76	75 4760	OUTER	40	10/76	14	49	1.7	0.03	5710
US 68	MARSHALL (OVERLAID)	1- 79	3.1- 6.3	3.2	FAP-SP	10/76	75 4760	OUTER	40	10/76	15	44	2.3	0.02	4760
US 68	MARSHALL (70% GRAVEL, 30% LIMESTONE) (OVERLAID AFTER 1979 TESTS)	1- 79	6.3- 7.3	1.0	FAP-SP	9/77	75 4760	OUTER	40	10/77	4	39	1.1	0.08	6280
							77 6640	OUTER	40	7/78	4	45	4.7	1.03	6800
								OUTER	40	8/79	10	45	4.3	2.33	6700
US 68	MARSHALL (40% GRAVEL, 60% LIMESTONE) (OVERLAID AFTER 1979 TESTS)	1- 79	7.3- 8.3	1.0	FAP-SP	9/77	75 4760	OUTER	40	10/77	4	37	1.1	0.08	6280
							77 8370	OUTER	40	7/78	4	43	0.4	1.29	8600
								OUTER	40	8/79	10	40	2.1	2.93	8500
US 68	MARSHALL (100% GRAVEL) (OVERLAID AFTER 1979 TESTS)	1- 79	8.3- 9.4	1.1	FAP-SP	9/77	75 4760	OUTER	40	10/77	5	42	3.2	0.08	6280
							77 10100	OUTER	40	7/78	4	43	5.7	1.56	10400
								OUTER	40	8/79	10	51	4.4	3.54	10200
I 9024	MC CRACKEN -MARSHALL (95% GRAVEL, 5% MF)	1- 73	16.1- 22.0	5.9	INTER	9/77	77 7620	OUTER	40	10/77	45	60	2.9	0.0	6500
								OUTER	40	7/78	43	62	2.6	0.98	6500
								OUTER	40	8/79	43	58	2.0	2.29	6600
								INNER	40	10/77	23	67	1.2	0.0	1100
								INNER	40	7/78	46	68	1.9	0.16	1100
								INNER	40	8/79	23	63	1.9	0.38	1100

OPEN-GRADED FRICTION COURSE, TYPE 1 (GRANITE OR GRANITE AND LIMESTONE)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG STD	NUMBER DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 25E	BELL	11- 7	14.7- 16.3	1.6	FAP-SP	10/76	75 7700	OUTER	40	10/76	11	39	2.2	0.0	7640
	(70% GRANITE, 25% LIMESTONE, 5% MF)							OUTER	40	6/77	12	40	2.8	0.92	7640
	(PATCH WITH OGFC IN WHEELPATH, DATE UNKNOWN)						77 11990	OUTER	40	10/78	7	48	2.3	4.22	11500
	(DATA NOT USED IN ANALYSIS)						75 7700	OUTER	25	6/77	10	48	2.3	0.92	7640
								OUTER	55	6/77	11	38	2.1	0.92	7640
US 25E	BELL	11- 7	16.3- 17.9	1.6	FAP-SP	10/76	75 7700	OUTER	40	10/76	11	38	1.8	0.0	7640
	(40% GRANITE, 55% LIMESTONE, 5% MF)							OUTER	40	6/77	14	40	2.3	0.92	7640
	(PATCH WITH OGFC IN WHEELPATH, DATE UNKNOWN)						77 11990	OUTER	40	10/78	9	45	4.1	4.21	11500
	(DATA NOT USED IN ANALYSIS)						75 7700	OUTER	25	6/77	11	46	3.2	0.92	7640
								OUTER	55	6/77	11	36	1.2	0.92	7640
US 25E	BELL	11- 7	17.9- 19.5	1.6	FAP-SP	10/76	75 5820	OUTER	40	10/76	10	42	2.0	0.0	5770
	(95% GRANITE, 5% MF)							OUTER	40	6/77	12	48	1.6	0.70	5770
	(PATCH WITH OGFC IN WHEELPATH, DATE UNKNOWN)						77 6590	OUTER	40	10/78	8	54	3.8	2.38	6500
	(DATA NOT USED IN ANALYSIS)						75 5820	OUTER	25	6/77	12	55	3.5	0.70	5770
								OUTER	55	6/77	11	43	1.9	0.70	5770
US 25E	KNOX	11- 61	0.0- 5.4	5.4	FAP-SP	10/76	75 5820	OUTER	40	9/76	21	45	1.5	0.0	6350
	(95% GRANITE, 5% MF)							OUTER	40	6/77	22	49	2.6	0.70	5770
							77 7220	OUTER	40	10/78	21	53	3.2	2.59	7100
							75 5820	OUTER	25	6/77	21	57	1.6	0.70	5770
								OUTER	55	6/77	22	44	1.9	0.70	5770
US 68	BOURBON	7- 9	0.0- 2.3	2.3	SP	11/76	75 8790	OUTER	40	9/77	16	45	7.4	1.30	8790
	(95% GRANITE, 5% MF)						77 5060	OUTER	40	9/78	9	44	4.6	1.76	5300
								OUTER	40	8/79	10	55	5.0	2.60	5300
							75 8790	OUTER	25	9/77	13	49	2.4	1.30	8790
								OUTER	55	9/77	12	37	5.4	1.30	8790
US 119	BELL	11- 7	0.0- 5.5	5.5	FAP-SP	10/76	75 6500	OUTER	40	10/76	30	44	1.5	0.00	2170
	(95% GRANITE, 5% MF)							OUTER	40	6/77	21	50	2.1	0.78	6450
							77 5550	OUTER	40	10/78	21	55	3.1	2.07	5700
							75 6500	OUTER	25	6/77	21	56	1.7	0.78	6450
								OUTER	55	6/77	21	45	2.3	0.78	6450
US 460	MAGOFFIN	10- 77	14.4- 20.3	5.9	SP	8/78	77	OUTER	40	12/78	19	49	2.0	0.00	
	(96% GRANITE, 4% MF)														

OPEN-GRADED FRICTION COURSE, TYPE 1 (MISC AGGREGATE)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 68	WARREN	3-114	3.6- 8.0	4.4	FAP-SP	10/76	75 6690	OUTER	40	11/76	18	45	1.6	0.09	7490
	(100 % CRUSHED QUARTZ (VIRGINIA))							OUTER	40	7/77	18	49	1.8	0.91	6760
							77 6850	OUTER	40	7/78	18	53	2.8	2.20	6900
								OUTER	40	6/79	18	53	3.1	3.38	6900
							75 6690	OUTER	25	7/77	18	56	1.9	0.91	6760
								OUTER	55	7/77	19	46	2.0	0.91	6760
KY1699	JEFFERSON	5- 56	0.0- 0.9	0.9	SS	9/76	75 5828	OUTER	40	10/76	27	50	2.1	0.13	5830
	(100% LIGHTWEIGHT AGGREGATE (SOLITE))							OUTER	40	8/77	11	66	2.0	0.94	5830
	(OVERLAID IN 1979)							OUTER	25	8/77	9	72	1.1	0.94	5830
								OUTER	55	8/77	9	60	1.4	0.94	5830

OPEN-GRADED FRICTION COURSE, TYPE 2

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 60	BALLARD (100% GRAVEL)	1- 4	0.3- 6.5	6.2	FAP-SP	9/76	75 3530	OUTER	40	10/77	30	43 2.6	0.69	3530
							77 3480	OUTER	40	7/78	24	42 2.5	1.16	3500
								OUTER	40	8/79	25	39 2.2	1.84	3500
							75 3530	OUTER	25	10/77	28	48 3.1	0.69	3530
								OUTER	55	10/77	28	40 2.3	0.69	3530
US 62	GRAYSON (70% GRAVEL, 30% LIMESTONE)	4- 43	14.0- 19.0	5.0	FAP-RS	11/76	77 2400	OUTER	40	9/78	19	41 3.2	0.80	2400
								OUTER	40	10/79	20	51 2.1	1.28	2400
US 62	HARDIN (97% GREEN RIVER, 3% MF)	4- 47	0.0- 4.7	4.7	FAS-SS	10/74	73 3360	OUTER	40	11/74	10	49 4.7	0.05	3450
								OUTER	40	12/74	14	48 3.3	0.10	6900
							75 2540	OUTER	40	9/75	19	47 1.8	0.44	2620
								OUTER	40	6/76	19	50 1.4	0.80	2590
								OUTER	40	11/76	18	48 2.0	0.98	2580
								OUTER	40	6/77	18	56 1.6	1.27	2570
							77 3190	OUTER	40	9/78	19	48 6.1	2.04	2800
								OUTER	40	7/79	16	56 2.7	2.50	2900
							73 3360	OUTER	25	12/74	14	58 3.0	0.10	6900
							75 2540	OUTER	25	9/75	17	54 1.8	0.44	2620
								OUTER	25	6/77	18	62 2.4	1.27	2570
							73 3360	OUTER	55	12/74	14	43 3.7	0.10	6900
							75 2540	OUTER	55	9/75	17	45 2.1	0.44	2620
								OUTER	55	6/77	18	50 2.3	1.27	2570
KY 90	BARREN (70% GRAVEL, 30% LIMESTONE)	3- 5	10.2- 22.0	11.8	UN	10/76	75 4980	OUTER	40	8/77	24	49 2.6	0.71	4760
							77 4700	OUTER	40	10/78	49	44 4.7	1.69	4600
							75 4980	OUTER	25	8/77	25	53 4.2	0.71	4760
								OUTER	55	8/77	23	47 2.9	0.71	4760
KY 94	CALLOWAY (70% GRAVEL, 30% LIMESTONE) (10.8-13.0 OVERLAID 1978, REST PATCHED)	1- 18	10.8- 16.8	6.0	FAS-SS	11/76	77 3790	OUTER	40	7/78	24	44 8.3	1.12	3700
KY 94	CALLOWAY (70% GRAVEL, 30% LIMESTONE) (ALL PATCHED 1978)	1- 18	16.8- 24.2	7.4	FAS-SS	11/76	77 2450	OUTER	40	7/78	29	47 2.7	0.75	2500

SPRINKLE TREATMENT (FOR ASPHALTIC-CONCRETE PAVEMENT)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 31E	NELSON (QUARTZITE)	4- 90	15.7- 16.7	1.0	FAP-SP	9/78	77 7670	OUTER	40	10/78	10	46 1.9	0.06	7200
								OUTER	40	6/79	10	51 2.5	1.00	7600
								OUTER	40	10/79	10	47 1.9	1.54	7600
								OUTER	25	10/78	10	57 1.9	0.06	7200
								OUTER	55	10/78	10	40 3.8	0.06	7200
US 31E	NELSON (SLAG)	4- 90	16.7- 17.7	1.0	FAP-SP	9/78	77 5390	OUTER	40	10/78	10	50 2.7	0.04	5300
								OUTER	40	6/79	10	56 2.1	0.71	5400
								OUTER	40	10/79	11	54 2.9	1.08	5400
								OUTER	25	10/78	10	64 2.7	0.04	5300
								OUTER	55	10/78	10	45 3.0	0.04	5300
US 31E	NELSON (QUARTZ, GREEN RIVER)	4- 90	17.7- 18.7	1.0	FAP-SP	9/78	77 4410	OUTER	40	10/78	10	49 1.1	0.04	4600
								OUTER	40	6/79	10	57 1.1	0.58	4400
								OUTER	40	10/79	10	56 1.1	0.89	4400
								OUTER	25	10/78	11	59 1.7	0.04	4600
								OUTER	55	10/78	10	44 1.2	0.04	4600
US 31E	NELSON (GRANITE)	4- 90	18.7- 19.7	1.0	FAP-SP	9/78	77 4290	OUTER	40	10/78	11	47 1.8	0.03	4100
								OUTER	40	6/79	10	57 1.2	0.56	4300
								OUTER	40	10/79	10	57 3.0	0.86	4300
								OUTER	25	10/78	12	57 3.5	0.03	4100
								OUTER	55	10/78	10	44 1.0	0.03	4100
US 31E	NELSON (CONTROL)	4- 90	19.7- 20.5	0.8	FAP-SP	9/78	77 3810	OUTER	40	10/78	9	48 3.3	0.03	3100
								OUTER	40	6/79	10	53 2.3	0.50	3100
								OUTER	40	10/79	8	51 3.0	0.76	3100
								OUTER	25	10/78	8	62 3.8	0.03	3100
								OUTER	55	10/78	9	42 2.4	0.03	3100

MILLED, BITUMINOUS SURFACE, BEFORE OVERLAID

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9075	ROCKCASTLE	8-102	50.8- 59.0	8.2	INTER	9/77	75 17260	OUTER	40	9/77	34	52	7.1	0.0	12600
							77 17260	OUTER	40	12/77	64	48	2.1	0.39	12600
								OUTER	40	4/78	64	40	3.6	1.21	12600
							75 17260	OUTER	55	9/77	32	47	4.9	0.0	4600
							77 17260	INNER	40	12/77	32	53	1.7	0.14	4600
								INNER	40	4/78	32	48	2.3	0.44	4600
I 9075	ROCKCASTLE	8-102	59.0- 61.8	2.8	INTER	9/77	75 17260	OUTER	40	9/77	8	47	2.7	0.0	12600
								OUTER	40	9/77	23	49	6.2	0.1	12600
							77 17260	OUTER	40	12/77	26	50	2.0	0.39	12600
								OUTER	40	4/78	22	47	4.9	1.21	12600
							75 17260	OUTER	55	9/77	17	40	4.5	0.1	4600
							77 17260	INNER	40	12/77	19	52	1.9	0.14	4600
	INNER	40	4/78	15	52	3.3	0.44	4600							
I 9075	ROCKCASTLE	8-102	61.8- 65.2	3.4	INTER	9/77	75 17260	OUTER	40	9/77	14	49	1.4	0.0	12600
								OUTER	40	9/77	25	47	4.8	0.1	12600
							77 17260	OUTER	40	12/77	26	48	1.4	0.39	12600
								OUTER	40	4/78	27	44	1.9	1.21	12600
							75 17260	OUTER	55	9/77	23	42	3.2	0.1	4600
							77 17260	INNER	40	12/77	13	52	1.3	0.14	4600
	INNER	40	4/78	13	50	1.7	0.44	4600							

CLASS AA (SKID-RESISTANT), BITUMINOUS SURFACE

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 55	SPENCER	5-108	6.8- 7.9	1.1	FAS-SS	10/79	79 2770	OUTER	40	11/79	10	49	3.7	0.03	2770
								OUTER	25	11/79	6	60	2.2	0.03	2770
								OUTER	55	11/79	6	47	0.7	0.03	2770
I 9264	JEFFERSON (EB LANES)	5- 56	8.2- 14.3	6.1	INTER	10/79	77 82760	OUTER	40	10/79	24	41	4.3	0.06	62500
								INNER	40	10/79	12	46	2.7	0.02	20300
I 9264	JEFFERSON (WB LANES)	5- 56	8.2- 18.0	9.8	INTER	10/79	77 82560	OUTER	40	10/79	38	48	2.3	0.06	62200
								INNER	40	10/79	20	50	2.5	0.02	20400

CHIPSEAL SURFACE

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID NUMBER AVG STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
KY 151	FRANKLIN (OVERLAID)	5- 37	2.5- 3.0	0.5	FAS-SP	8/76	75 1240	OUTER	40	8/76	11	40 6.5	0.01	1450
								OUTER	40	10/76	13	35 4.3	0.04	1280
								OUTER	40	11/76	24	35 7.2	0.05	1270
								OUTER	40	6/77	18	30 6.2	0.19	1250
								OUTER	40	9/77	16	27 4.4	0.25	1250
KY 151	FRANKLIN (OVERLAID)	5- 37	3.0- 3.3	0.3	FAS-SP	8/76	75 1240	OUTER	40	10/76	9	57 1.6	0.0	1240
								OUTER	40	11/76	11	50 2.0	0.02	1390
								OUTER	40	6/77	11	18 11.3	0.15	1260
								OUTER	40	9/77	8	40 4.0	0.21	1250

BITUMINOUS, RECENT RESURFACING, MISC.

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 27	BOURBON	7- 9	6.7- 7.9	1.3	FAP-SP	8/76	77 8140	OUTER	40	9/77	19	45	3.3	1.35	7000
								OUTER	40	9/78	9	35	4.6	2.62	7000
								OUTER	25	9/77	11	58	3.7	1.35	7000
								OUTER	55	9/77	11	43	4.1	1.35	7000
								INNER	40	9/78	3	35	0.3	0.47	1200
US 60	BOYD (FULL DEPTH)	9- 10	4.3- 9.9	5.6	FAP-SP	3/72	75 13180	OUTER	40	9/75	24	47	4.4	5.67	8770
							77 18480	OUTER	40	9/77	22	37	4.3	10.37	10400
								OUTER	40	8/78	21	40	6.8	12.67	10800
							75 13180	INNER	40	9/75	23	54	1.9	1.33	2050
							77 18480	INNER	40	9/77	24	49	3.3	3.18	3200
								INNER	40	8/78	20	49	2.0	4.08	3500
US 62	NELSON	4- 90	14.7- 18.1	3.4	FAS-SS	0/ 0	77 5260	OUTER	40	9/78	12	33	8.4	0.00	5260
KY 80	PULASKI	8-100	21.8- 28.3	6.5	FAP-SP	8/75	73 4520	OUTER	40	8/75	24	40	9.3	0.0	4090
								OUTER	40	6/76	26	46	4.4	0.61	4090
								OUTER	40	6/77	27	37	4.3	1.37	4090
							77 5260	OUTER	40	9/78	22	30	3.0	2.64	4700
							73 4520	OUTER	25	6/77	24	49	3.8	1.37	4090
								OUTER	55	6/77	25	29	4.9	1.37	4090
								INNER	40	8/75	2	34	0.0	0.0	430
								INNER	40	6/76	27	49	4.8	0.06	430
								INNER	40	6/77	27	50	5.2	0.14	430
								INNER	25	6/77	25	59	3.4	0.14	430
								INNER	55	6/77	23	42	5.4	0.14	430
							77 5260	INNER	40	9/78	23	45	2.1	0.32	600
US 127	FRANKLIN (BOILER SLAG, NB LANES ONLY)	5- 37	4.5- 5.0	0.5	UR	9/77	75 12940	OUTER	40	10/77	4	52	1.4	0.13	6760
							77 9000	OUTER	40	9/78	3	46	4.2	1.36	7300
								OUTER	40	10/79	9	53	3.2	2.82	7400
							75 12940	INNER	40	10/77	4	51	0.9	0.04	1870
							77 9000	INNER	40	9/78	3	49	3.3	0.27	1400
								INNER	40	10/79	9	57	2.1	0.55	1400
US 421	FRANKLIN (BOILER SLAG, SB LANES ONLY)	5- 37	3.1- 3.6	0.5	UR	9/77	75 5600	OUTER	40	10/77	5	50	1.3	0.06	3310
							77 2730	OUTER	40	7/79	5	44	1.7	0.85	2500
							75 5600	INNER	40	10/77	3	52	1.7	0.01	420
							77 2730	INNER	40	7/79	4	49	4.5	0.06	200
US 421	FRANKLIN (CONVENTIONAL, NB LANES ONLY)	5- 37	31.0- 3.6	-27.4	UR	9/77	77 2730	OUTER	40	10/77	3	33	0.7	0.04	1900
US 421	FRANKLIN	5- 37	3.1- 3.6	0.5	UR	9/77	77 2730	OUTER	40	7/79	6	44	4.2	0.85	2500
US 421	FRANKLIN	5- 37	31.0- 3.6	-27.4	UR	9/77	77 2730	INNER	40	10/77	4	36	2.5	0.00	2730
US 421	FRANKLIN	5- 37	3.1- 3.6	0.5	UR	9/77	77 2730	INNER	40	7/79	5	50	0.9	0.06	200

BITUMINOUS, RECENT RESURFACING, MISC. (CONTINUED)

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ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9064	CLARK	7- 25	89.5-101.7	12.2	INTER	10/73	75 13370	OUTER	40	8/74	42	40	3.1	1.70	11320
							77 13660	OUTER	40	9/77	95	39	2.1	7.62	10600
							75 13370	OUTER	40	9/79	97	44	2.0	11.49	10600
I 9064	CLARK -MONTGOMERY	7- 25 7- 87	101.7-112.4	10.7	INTER	10/73	75 7550	OUTER	40	8/74	38	45	2.7	0.95	6350
							77 9460	OUTER	40	9/77	80	45	2.3	4.82	6700
							75 7550	OUTER	40	9/79	83	48	2.8	7.68	7100
I 9064	CARTER	9- 22	171.9-181.4	9.5	INTER	9/73	77 9410	OUTER	40	8/74	44	49	2.7	0.54	3570
								OUTER	40	9/77	72	37	2.3	5.15	7000
								OUTER	40	9/79	75	41	2.4	8.00	7300
I 9075	ROCKCASTLE	8-102	50.8- 60.6	9.8	INTER	8/78	77 21130	OUTER	40	8/79	78	42	6.0	2.66	14600
I 9075	ROCKCASTLE	8-102	62.0- 65.2	3.2	INTER	8/78	77 22590	OUTER	40	8/79	26	41	2.6	2.79	15300
I 9075	MADISON	7- 76	87.2- 89.9	2.7	INTER	7/72	75 23400	OUTER	40	9/74	10	33	2.5	6.20	15570
							77 29530	OUTER	40	9/77	22	34	1.5	15.12	16000
							75 23400	OUTER	40	8/79	23	36	1.4	21.47	16600
I 9075	MADISON -FAYETTE	7- 76 7- 34	89.9-100.4	10.5	INTER	7/72	75 22420	INNER	40	9/74	12	43	3.0	3.15	7910
							77 30650	OUTER	40	9/74	40	36	4.4	6.72	16870
							77 30650	OUTER	40	9/77	81	35	3.7	15.50	16400
I 9264	JEFFERSON	5- 56	14.3- 20.0	5.7	INTER	5/78	77 74520	OUTER	40	8/79	83	39	3.4	22.01	17000
								OUTER	40	9/74	38	44	5.5	3.80	9540
								INNER	40	9/74	38	44	5.5	3.80	9540
I 9264	JEFFERSON	5- 56	18.0- 20.0	1.9	INTER	5/78	77 32470	OUTER	40	6/78	23	42	1.6	0.90	49800
								OUTER	40	7/79	24	41	3.2	10.28	49800
								INNER	40	6/78	23	43	1.5	0.45	24700
I 9264	JEFFERSON	5- 56	18.0- 20.0	1.9	INTER	5/78	77 32470	INNER	40	7/79	12	44	3.7	5.11	24700
								OUTER	40	6/78	8	39	3.1	0.35	19500
								OUTER	40	7/79	8	43	5.1	4.02	19500
I 9264	JEFFERSON	5- 56	18.0- 20.0	1.9	INTER	5/78	77 32470	INNER	40	6/78	8	42	1.1	0.23	13000
								INNER	40	7/79	3	43	2.8	2.68	13000
								INNER	40	7/79	3	43	2.8	2.68	13000

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
US 31H	HARDIN	4- 47	0.0- 3.6	3.6	UR	11/74	75 8275	OUTER	40	9/75	15	47	1.9	1.12	7340
								OUTER	40	6/76	15	49	3.1	2.10	7180
								OUTER	40	11/76	16	40	4.7	2.62	7150
								OUTER	40	6/77	18	37	2.9	3.39	7120
							77 8275	OUTER	40	11/78	15	37	3.0	5.19	7100
								OUTER	40	10/79	22	38	4.7	6.39	7100
								OUTER	25	6/77	17	46	2.9	3.39	7120
							75 8275	OUTER	55	6/77	18	27	2.6	3.39	7120
								INNER	40	9/75	9	48	1.3	0.20	1320
								INNER	40	6/76	12	51	4.1	0.38	1290
								INNER	40	11/76	12	43	7.2	0.47	1290
								INNER	40	6/77	12	42	2.4	0.61	1280
							77 8275	INNER	40	11/78	10	45	2.4	0.93	1300
								INNER	40	10/79	12	45	2.5	1.15	1300
								INNER	25	6/77	12	54	2.3	0.61	1280
							75 8275	INNER	55	6/77	12	31	3.1	0.61	1280
US 31W	HARDIN	4- 47	30.2- 33.0	2.8	SP	12/74	75 15240	OUTER	40	9/75	10	46	3.6	1.61	11720
								OUTER	40	6/76	10	45	2.5	3.22	11610
								OUTER	40	11/76	11	40	3.2	4.07	11590
								OUTER	40	6/77	13	36	3.8	5.36	11570
							77 19790	OUTER	40	11/78	10	40	3.9	9.12	12700
								OUTER	40	10/79	11	40	3.9	11.51	12900
								OUTER	25	6/77	12	48	4.0	5.36	11570
							75 15240	OUTER	55	6/77	12	29	3.8	5.36	11570
								INNER	40	9/75	12	48	2.3	0.52	3800
								INNER	40	6/76	10	48	3.5	1.04	3770
								INNER	40	11/76	11	49	2.1	1.32	3760
								INNER	40	6/77	12	47	3.0	1.74	3750
							77 19790	INNER	40	11/78	10	45	6.8	3.42	4800
								INNER	40	10/79	12	47	4.9	4.42	5000
								INNER	25	6/77	13	60	3.0	1.74	3750
							75 15240	INNER	55	6/77	13	38	6.6	1.74	3750
US 31W	MEADE	4- 82	0.0- 0.8	0.8	FAP-SP	12/74	75 15240	OUTER	40	9/75	2	47	0.0	1.61	11720
								OUTER	40	6/76	4	49	1.4	3.22	11610
								OUTER	40	11/76	6	42	1.5	4.07	11590
								OUTER	40	6/77	6	40	5.7	5.36	11570
							77 13660	OUTER	40	11/78	6	41	6.0	7.97	11100
								OUTER	40	10/79	10	39	3.9	9.78	11000
								OUTER	25	6/77	7	47	3.3	5.36	11570
							75 15240	OUTER	55	6/77	5	30	4.5	5.36	11570
								INNER	40	9/75	2	48	0.0	0.52	3800
								INNER	40	6/76	5	50	1.0	1.04	3770
								INNER	40	11/76	6	48	4.6	1.32	3760
								INNER	40	6/77	6	47	2.7	1.74	3750
							77 13660	INNER	40	11/78	6	49	3.5	2.46	3400
								INNER	40	10/79	10	48	5.9	2.98	3400
								INNER	25	6/77	6	58	4.0	1.74	3750
							75 15240	INNER	55	6/77	4	38	3.9	1.74	3750

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9024	CHRISTIAN	2- 24	85.6- 93.3	7.7	INTER	10/75	75 1600	OUTER	40	6/75	34	47	3.5	0.0	1600
							77 4920	OUTER	40	10/77	57	46	2.4	0.96	2700
								OUTER	40	10/79	59	48	2.1	2.58	3500
							75 1600	OUTER	25	6/75	32	55	3.0	0.0	1600
								OUTER	55	6/75	28	38	2.8	0.0	1600
								INNER	40	6/75	31	49	3.1	0.0	1600
							77 4920	INNER	40	10/77	29	47	1.7	0.09	200
								INNER	40	10/79	29	55	1.6	0.27	400
							75 1600	INNER	25	6/75	30	56	3.7	0.0	1600
								INNER	55	6/75	23	38	2.4	0.0	1600
I 9064	FRANKLIN -WOODFORD	5- 37 7-120	57.9- 65.3	7.4	INTER	9/73	75 10670	OUTER	40	10/74	26	42	4.1	3.29	17280
							77 14160	OUTER	40	9/77	72	38	2.7	8.01	10920
								OUTER	40	7/79	57	31	2.7	11.83	11200
							75 10670	INNER	40	10/74	28	53	2.8	0.75	3960
							77 14160	INNER	40	9/77	15	58	4.3	1.83	2500
								INNER	40	7/79	33	49	4.2	3.07	2900
I 9064	WOODFORD -FAYETTE	7-120 7- 34	65.3- 75.2	9.9	INTER	9/73	75 11030	OUTER	40	10/74	36	43	3.3	2.96	15550
							77 12790	OUTER	40	9/77	79	38	2.5	7.81	10640
								OUTER	40	7/79	71	32	3.0	11.21	10600
							75 11030	INNER	40	10/74	36	52	2.3	0.60	3170
							77 12790	INNER	40	9/77	6	56	0.5	1.75	2380
								INNER	40	7/79	35	51	3.9	2.72	2600

ROAD	COUNTY	DISTRICT -COUNTY	MILEPOINT TERMINI	LENGTH (MILES)	SYSTEM	COMPL DATE	TRAFFIC VOLUME YR AADT	LANE GROUP	TEST SPEED (MPH)	MONTH TESTED	NUMBER OF TESTS	SKID AVG	NUMBER STD DEV	CUMULATIVE TRAFFIC (MILLIONS)	EFFECTIVE AADT
I 9024	CHRISTIAN	2- 24	64.3- 76.1	11.8	INTER	10/75	75 1640	OUTER	40	6/75	38	57	3.6	0.0	1640
	-TRIGG	1-111						OUTER	40	8/76	45	55	2.9	0.26	1650
							77 2620	OUTER	40	10/77	41	54	1.8	0.69	1900
								OUTER	40	10/79	82	58	1.6	1.59	2200
							75 1640	OUTER	25	6/75	36	62	2.2	0.0	1640
								OUTER	55	6/75	31	51	3.5	0.0	1640
								INNER	40	6/75	38	57	3.5	0.0	1640
								INNER	40	8/76	44	56	4.6	0.02	90
							77 2620	INNER	40	10/77	41	53	2.0	0.04	100
								INNER	40	10/79	42	57	2.2	0.10	100
							75 1640	INNER	25	6/75	35	64	3.9	0.0	1640
								INNER	55	6/75	29	52	4.0	0.0	1640
I 9024	CHRISTIAN	2- 24	76.1- 85.6	9.5	INTER	10/75	75 1900	OUTER	40	6/75	44	55	4.1	0.0	1900
								OUTER	40	8/76	11	53	6.1	0.30	1870
							77 2540	OUTER	40	10/77	75	56	2.1	0.74	2100
								OUTER	40	10/79	75	58	1.7	1.61	2200
							75 1900	OUTER	25	6/75	38	61	2.7	0.0	1900
								OUTER	55	6/75	35	52	6.6	0.0	1900
								INNER	40	6/75	40	57	3.0	0.0	1900
								INNER	40	8/76	12	55	4.7	0.01	90
							77 2540	INNER	40	10/77	36	56	2.7	0.04	100
								INNER	40	10/79	37	61	2.6	0.10	100
							75 1900	INNER	25	6/75	41	61	2.3	0.0	1900
								INNER	55	6/75	37	53	5.1	0.0	1900